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DUCK PORTRAITS. BY H. H. PITTMAN.
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1. BLUE-WINGED TEAL. 2. SHOVELLER.

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SOME OBSERVATIONS ON THE WATER OUZEL.[1]

BY A. H. CORDIER, M.D.

Plates VI–VII

IN the limited literature on ornithology at my command I find very little written about the Dipper, or Water Ouzel (*Cinclus mexicanus unicolor*), and much of this at variance with my observations on the bird. Before entering into details regarding questions of the bird's anatomical makeup and aquatic habits I wish to report my experience with a pair of nesting Ouzels in Colorado during the month of June, 1926.

I have made many visits to the beautiful Seven Falls located in the Cheyenne Cañon of Colorado. The altitude here is about seven thousand feet. This cañon is one of the wonder spots of American landscape, walled by perpendicular granite masses many hundreds of feet in height. The cañon is about one mile in length and from thirty feet to one hundred feet wide. It ends in a beautiful circular glacial-like cirque, down whose sides a stream from dizzy heights plunges in seven leaps. At the base of this beautiful waterfall, where the sun at mid-day plays on the tossing spray, myriads of miniature rainbows form in the mist. In the midst of this colorful display on a narrow rocky ledge the Ouzels each year build their nest of water soaked green moss, a few dead twigs and grasses. Mr. Standahl, the official photographer for the Seven Falls Company, told me that the Ouzels for the last five years had

[1] Read at the meeting of the American Ornithologists' Union, at Ottawa, Canada, October 13, 1926.

built their nest and reared their young on a small ledge near the foot of the last fall. In 1925 they reared two broods there. He wrote me June 18, "The young Ouzels are hatched," and I set out for the Falls, seven hundred miles from my home city.

At the foot of the Falls is a shallow granite-floored and granite-walled pool about thirty by thirty feet in area and one foot deep. In this icy cold and crystalline water I built a platform within six feet of the nest and from this continuously sprayed perch, clothed in waterproof garments, with camera protected by a rubber cloth, I stood for many hours making "stills" and "close-up" moving pictures and observing the birds.

Within twenty minutes after I mounted the platform the birds were feeding their young. The female did most of the feeding. On her alighting near the nest with food for the young, there was no hesitation, they fed at once. After feeding and making a hurried inspection of the immediate surroundings, before her departure, she often took a step or two away from the nest, turned about as though assuring herself that all was well and that she had not forgotten anything. On leaving the nest, she would often fly so close to my head and camera that I had to dodge to safety. At no time did either bird show the least resentment at my presence. On one occasion when my head was within eighteen inches of the nest, the female lit on the face of a slick rock three feet from the nest, but only for a second. She had in her beak a small rainbow trout, which she delivered to one of the young birds. Although there were four young birds, at no feeding did I see more than two gaping mouths protruding from the nest's entrance. The young Ouzel has an appetite not excelled by a young Robin and is a persistent beggar. The parent birds did not within my hearing utter any sounds other than the feeding call as they approached the nest with food. I have heard them in other localities sing melodiously and freely, the sweet notes rising above the crashes of rapids and the roar of waterfalls.

The nest measured ten inches in its horizontal, and eight inches in its vertical dimension. The nest entrance was on the side, a little below the center. This opening was about four inches in its diameter. The nest cavity was about five by five inches. I had ample time and opportunity to make these measurements without

disturbing the parents or doing the nestlings any harm. The nest was finished and contained eggs May 28. The young were several days old on June 20, my first visit. On July 4 they left the nest.

The male was slightly larger than the female. His feeding visits were about one to ten as compared with those of the female. The female fed about eight times per hour. The male fed oftenest between ten and two o'clock, at which time the combined feeding visits averaged twelve per hour. I noticed that the male made most of his visits to the nest while the female was brooding. She entered the nest by crawling over the young birds, turned about within the nest cavity and remained far back in the nest. At such times when the male made his visits, she remained in the nest, the young birds protruding their heads from beneath her breast to receive the food from the male. He rarely hesitated after feeding but took his departure at once. The female usually continued her brooding until she decided to depart, disregarding his visits. On coming out of the nest she climbed over the young and usually turned two or three times in front of the nest and inspected the margin of the door jam and the little shelf of rock in front of the nest.

The birds are extremely cleanly in their habits. As the interior of the nest was often inspected, any excrement found adhering to a straw or piece of moss was carefully picked up and carried away. The young birds when defecating turned the tail toward the nest entrance and with a well marked expulsive effort shot the foecal mass four to six inches from the nest. These masses were always enclosed in a membrane. Many of them rolled unbroken down the rocky incline into the water and were carried down stream. Those remaining were picked up by the female and removed. Some of them sank and could be seen as pearly white globules on the bottom of the pool. The mother often entered the nest and cleansed every small particle of filth from its floor, roof and sides, tossing it from her bill into the water or carrying it down stream. The male bird did not at any of his visits remove any of the fecal debris or other filth from the nest or its vicinity.

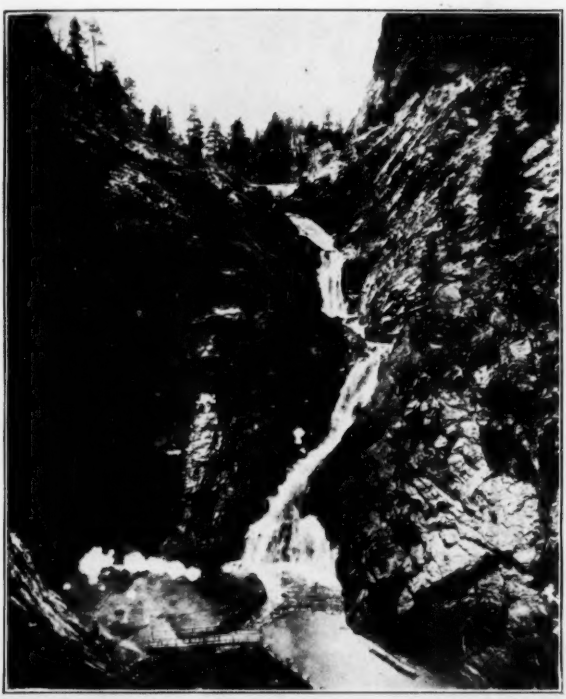
One bird only was fed at a feeding visit. On one occasion the male fed twice in five minutes. The female was in the nest during this time.

Some of the food is collected from the surface of the water as the bird swims, some from damp stones on the shores of the brook, some from still, pebbly spots near the shore and beneath the water, and some from the depths of the rapids and even in foaming whirlpools.

These webless footed birds are as artful and daring swimmers and divers as the Grebes and Mergansers. They are courageous birds in the water. The sexually maddened salmon in its element, as it rushes up rapids and over waterfalls, displays no more courage than this little bird as it fearlessly dives into whirlpools and rushing rapids.

At no time did I see either bird in a position of repose or rest. While the female was collecting food from among the pebbles in shallow water at the edge of the stream, if I approached a little too near (five feet), she would hesitate, teeter a few times, give me a few winks, and then resume her food hunting, or in a disgusted manner, as if to say "don't bother me," fly a few feet up or down stream. What little traveling these birds did was up and down their own thoroughfare. In seeking food in the still pools, the female with her head up stream alighted on some object protruding from the water. From this perch, after bobbing a few times, she waded leisurely into the still water to the bottom and walked deliberately about hunting under the edges of rocks for her prey. One-half minute was the longest time I saw her remain immersed. If she succeeded in catching anything, she came to the surface like a cork, secured a good hold on her prey, and flew toward the nest. When gathering food in swift water, she seemed to go down head first with her feet holding on to the rock beneath the surface and fed up stream. The toe nails are long and the flexors are strong, thus the feet are constructed like ice creepers, giving the bird much foot power. This was beautifully illustrated by the bird's ability to scale the water-splashed, glazed surface of the almost vertical face of the cliff down which the Seven Falls rush. Repeatedly the bird flew from the nest and alighted on the slick face of the cliff within a few inches of the massed waters of the fall, and climbed up its perpendicular surface, all the while gathering some form of food for the young.

These birds at no time displayed any of the nervous restlessness



1. SEVEN FALLS, HOME OF THE WATER OUZEL.
2. WATER OUZEL PHOTOGRAPHED BELOW THE SURFACE OF THE WATER.

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of the House Wren. The ceaseless food seeking was marked by no undue haste. It was an act carefully planned and skillfully executed. I saw the Ouzels gathering food a half mile down stream. In returning to the nest they always flew close to the water and followed the bends of the stream. Away from the nest, they permitted me to approach within five to fifteen feet. After the first day at the nest, the female would feed the young with my head only fifteen or twenty inches away.

I saw the female catch a trout nearly two inches long; she flew to a partly submerged flat rock to secure a firm hold on the fish, then pounded it to a pulp before delivering it to the young.

A few yards below the nest site, the stream is converted by a dam, into a small lake one hundred yards long, thirty feet wide, and from two feet to ten feet deep. In this pool are many large rainbow trout. The water in this little lake is as clear as crystal, and I could see the Ouzel wade on the bottom of the pool, where the water was two feet deep. I saw the bird fly fifteen or twenty feet while two or three feet under the water, come to the surface and swim as gracefully as a Duck.

On one occasion a young White-throated Swift (*Aeronautes melanoleucus*) had fallen from its nest and lodged on the wall of the cañon. The Ouzel discovered it, flew to it, looked it over, and returned to her aquatic pursuits.

In 1925 I found two nests of the Ouzels within a mile on the same stream. This is unusual, as a pair of nesting Ouzels usually pre-empts a given territory on a stream by proceeding to drive away any "claim jumping" Ouzels who invade that territory. Choice nesting sites for Ouzels are scarce. I have often wondered where each new brood finds an unclaimed nesting site. The bird banders could quickly solve this problem, as Ouzels are not long distance travelers. They are permanent residents of their nesting locality and seem to thrive and enjoy their winters about the few water holes remaining open, amidst zero or below zero temperatures. In Alaska and Wyoming they live in a temperature of fifty below zero. Their heavy water-proof covering, like a thermos bottle, keeps the cold out and the heat in.

In the literature at my command there appears to be a diversity of opinion on some points in this bird's anatomical make up and aquatic habits.

Wishing to obtain an expression in regard to the nictitating membrane and its action, I wrote to a number of ornithologists and submitted the following questions, and a courteous reply was received from each. The diversity of opinion as expressed in these replies, convinces me that the Water Ouzel presents some problems in its anatomy and physiology not generally understood, and that some of its aquatic habits are still in dispute.

1. Has the Water Ouzel a nictitating membrane?
2. Does it use this membrane?
3. Is its upper eyelid covered with small white feathers?
4. Does the membrane move from the inner canthus horizontally, as in the Eagles, vertically, or obliquely across the cornea?
5. Why does it use the membrane so frequently?
6. Does the membrane come from above and go downward across the cornea?
7. Is it clear or translucent in the living bird?
8. Does the lower eyelid move upwards?
9. Does this bird ever use the membrane while beneath the surface of the water?

Dr. W. H. Bergtold of Denver, Colorado, whose home city is surrounded by Water Ouzels' territory, says: "I never paid any attention to the nictitating membrane, but I do not recall ever seeing the bird under water with the membrane covering its eyes. The eyes have always been open."

Mr. Charles E. Aiken of Colorado Springs, who has lived for many years along the mountain streams where the Ouzels nest, says: "I can give you no assistance from personal observations of the Water Ouzels. I got the impression that the membrane came up from the bottom."

Mrs. Shufeldt, Washington, D. C.: "I only wish I could help you in regard to the literature on the Water Ouzel. Looking over my husband's set of bound books, his work from 1880 to 1926, I find but one short paper devoted to the Water Ouzel."

Charles W. Richmond, Associate Curator, Division of Birds, U. S. Nat. Museum: "On the nictitating membrane of the Dipper I find very little, though I have searched for sometime this morning in the books in our library. I had hoped to add a reference to Macgillivray's 'History of the British Birds,' but while he

gave a very excellent account of the British species of the Dipper, he seems to have omitted any mention of its nictitating membrane or anything connected with the eye apparatus.

"Macgillivray was one of the few British ornithologists who investigated the anatomy of birds of that region and he seems to have overlooked this item. I am sorry I have not been able to help you very much in this matter, but the fact is there has not been much to add to Dr. C. W. Townsend's observations."

Mr. A. C. Bent, Taunton, Mass.: "In reply to your letter of the 4th inst. I am sorry to say that I know nothing about the anatomy of the Water Ouzel except what I have read in recent periodicals about it. I have seen the bird a few times and collected a few specimens in Alaska."

W. DeW. Miller, for Dr. F. M. Chapman of the American Museum of Natural History: "The Dipper has a nictitating membrane and it is separate from the upper and lower lids. The upper eyelid is covered with small white feathers. The nictitating membrane moves horizontally or nearly so. I believe the membrane is translucent or nearly clear in the live bird. Your other questions I cannot answer with any degree of certainty."

Dr. Charles W. Townsend, who is one of the most accurate field ornithologists I know, in 'The Condor' (Vol. XXVII, pp. 143, July, 1925) says: "Quoting from Grinnell and Storer, 'Animal Life in the Yosemite,' p. 544, 'The Nictitating membrane or third eyelid is whitish in the Dipper and when drawn backward across the eye as it is frequently when the bird is above water, can be seen at a considerable distance. This membrane probably is drawn over the eyeball when the bird is working beneath the surface of the water.'

"Dawson's Birds of California, II, p. 733, says of this bird: 'Ever and again he delivers a slow wink upside down with the white nictitating membrane.' "

Dr. Townsend continues, "I hesitate to disagree with such authorities, but my observations, made under very favorable circumstances and mainly with this point in view, lead me to think that the winking is done with the upper eyelid. My studies of other birds to be detailed later, confirm me in the belief that it is not the nictitating membrane of the Dipper which makes such conspicuous

and easily seen winks. As the movement in every case seemed to me to be from above downward, it was apparent that it was the upper eyelid that winked and not the nictitating membrane, for movement of the latter is from the inner angle of the eye outward. I noticed several times that a narrow upper white lid at these times was not at once returned to its place. The fact that the part moved is white in an otherwise dark bird, has doubtless led to the belief that this is the nictitating membrane which in most birds is of a milky white color; but the direction of the winking is a vertical and not a horizontal or slightly oblique plane and proves this belief to be erroneous."

An anatomical structure that is common to most birds will be developed largely in proportion to the demands created by a bird's surroundings and habits. This is a noticeable fact in the case of the Water Ouzel. The nictitating membrane in this bird is an outstanding feature of its physical make up and habits. The surroundings in which the bird lives and its habits have been the means of developing this membrane into an appendage essential to the bird's comfortable existence. The membrane is called into action to clear the cornea of the watery mist while the bird is near the spray and splashes of falls and rapids. This was beautifully illustrated while the female was in the nest brooding. The flashes of the membrane could plainly be seen. The spray from the nearby falls, with the changing air currents could be seen to enter the nest and with each gust of moistened air, the membrane was called into action with increased vigor to brush aside the watery vapors from the cornea. This was performed independently of the white margined upper eyelid. The slow eyelid action is in part controlled by volition; the quick action of the membrane is brought about by an unconscious reflex demand.

Like Dr. Townsend, "I hesitate to disagree with such an authority." However, with some of his deductions I must take issue. My observations leading to these conclusions were made at a range of four feet to eighteen inches from the bird, extending over several hours each day for several days. The winking in this bird was performed by the action of the nictitating membrane and not by the upper eyelid. The upper eyelid has a well defined white margin. From beneath this, the membrane was flashed in a down-

1. WATER OUZEL WITH SMALL TROUT IN ITS BILL.
2. WATER OUZEL AT NEST.

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ward direction in rather an oval shape, extending to the lower border of the cornea. The moving pictures show this membrane very distinctly. The movement is seen to come from above downward, *nearly the horizontal width of the upper eyelid.* When the bird was in the shadow of the nest cavity, with my eyes within eighteen inches of it, I could see the membrane very plainly as it frequently flashed across the eye ball. At other times I could see the iris and pupil, and again I could see the bird's head distinctly when neither the iris nor membrane could be seen, as the cornea was covered by a dark eyelid. Whether this was the lower, the upper, or both upper and lower eyelids, external to the membrane, I was unable to determine. As a rule most birds use their lower eyelids to cover the cornea when sleeping. The upper eyelid is not as free in its movements owing to the absence of constrictor muscles. In the Ouzels the upper eyelid moves freely. The external layer of the upper lid is like any other part of the bird's naked skin surface. The glistening, pearly-white, translucent, moist fold of the conjunctiva, making the nictitating membrane, does not present the appearance of the outer layer of the upper eyelid. The true lids in most birds move up and down, the winker moving horizontally. The Water Ouzel is an exception in so far as the movement of the winker is *nearly vertical.* In no bird can the upper eyelid be made to close and open with the speed of the nictitatng membrane. According to the record made by the moving picture camera, there are five frames, or individual pictures, impressed on the film at each flash of the membrane. This represents about one-third of a second to each wink. Some of the winks are so quick that they may be compared to the rapid action of a focal-plane shutter of a graflex camera. On one occasion Mr. Sandahl pressed the button of the camera exactly at the time the bird winked. This picture shows the extent of the membrane's action from above downward. It also shows the membrane as an oval covering of the eye and not a straight line shield as would be the case if made by the upper eyelid.

This membrane in the Golden and Bald Eagles moves horizontally from the inner canthus past the cornea. The Alligator is almond-eyed, the pupil being a vertical slit. In this creature the nictitating membrane moves upward and outward from beneath the lower eyelid.

I find that certain authors are in error as to some of the bird's habits.

Jacob H. Studer, in 'The Birds of North America,' 1876, page 139, says: "When the Water Ouzels dive below the surface of the water, there is a film of air surrounding them which looks like silver and may assist in supporting respiration. They do not, however, swim on the surface, but always dive and sometimes fly across streams beneath the surface."

These birds have an under cape of oily down; while in the water, this often may be seen protruding through or between the heavier coat of feathers producing a shimmering halo about some parts of the bird's body. This oily down, like the powder-down tracts on the breast of the Black-Crowned Night Heron, may have led Studer to write the above. What effect darkness might have on this shimmering I am unable to state. Some writers have claimed that a phosphorescent-like glow may be seen on the breast of Herons. Forbush in 'Birds of Massachusetts' 1926, I think, by good witnesses disproves this claim. The Ouzel is a graceful swimmer on the surface of the water. It floats like a cork and uses its big webless toes as propellers.

Dall (Trans. Chicago Acad. I, 1869, p. 277) says, "When these birds are disturbed, they dive into the water." Of the many I have observed, I have never seen one go under the water from fright. The Water Ouzel's ability to immerse its body at will and to walk about on the bottom of the stream while feeding, then to return to the surface like a submarine and float as lightly as a piece of cork is hard to comprehend.

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PRESENT STATUS OF THE CHECK-LIST OF FOSSIL BIRDS FOR NORTH AMERICA.[1]

BY ALEXANDER WETMORE.

THE first fragment of a fossil bird found in North America of which there is record, secured by S. W. Conrad in the marl beds near Arneytown, New Jersey, was mentioned by Dr. Morton in 1834 in his 'Synopsis of the Organic Remains of the Cretaceous in the United States,' but was not named until 1870 when it served as the type of *Palaeotringa vetus* of Marsh. The type of this species therefore, in date of discovery, is the earliest known of American fossil birds.

Ebenezer Emmons in 1857 named what is supposed to be a fossil bird from fragmentary bones from North Carolina, but definite study of the bird life in the fossil deposits of North America may not be said to begin until the year 1870, when there came announcement by Othniel Charles Marsh of five forms from the Cretaceous, and four from what were then called Tertiary formations. Other species were described by Edward D. Cope in the same year, while in 1872 Marsh gave to the world notice of the first of the famous toothed birds of the west. The labors of the two eminent paleontologists last mentioned continued to such effect that in 1884 the list of described fossil birds had increased to forty-six species, the number given in the fossil list in the first edition of the A. O. U. 'Check-List' published in 1886.

In years subsequent to this, miscellaneous bones of fossil birds continued to come from various sources, while exploration of Pleistocene beds in what are known as the Fossil Lake deposits in Oregon, led to the discovery of large numbers of bones of birds, from which R. W. Shufeldt in 1891 and 1892 identified approximately fifty species, to which later investigations added still others. These have included extinct Flamingos, Geese, Grebes, Gulls, Crows and a Blackbird, as well as bones of the Mallard, Baldpate, Hooded Merganser and many others among living forms. From this and other sources, the second edition of the A. O. U. 'Check-List' published in 1895, included sixty-four fossil species.

[1] Read at the meeting of the American Ornithologists' Union, at Ottawa, Canada, October 13 1926.

Though rich in avian material the Fossil Lake beds of Oregon have been eclipsed by discovery of the wonderful deposits in the Pleistocene asphalt lenses of Rancho La Brea, near Los Angeles, California, which constitute one of the most important finds on this continent in this branch of palaeontology since they have yielded approximately one hundred thousand bones of birds. These have passed under the capable hands of Loye Miller, who has found among them, extinct and modern species of Eagles and Condors, a great, heavy-beaked Vulture, (*Teratornis merriami*) a large gallinaceous bird named *Parapavo californicus* that is allied to the Ocellated Turkey of southern Mexico and Guatemala, Owls, Storks and many others. Study of these had barely begun with the issue of the third edition of the A. O. U. 'Check-List' in 1910, so that the fossil list in that volume includes only seventy-two species, an increase of only eight in the fifteen years that had elapsed since the second edition.

In addition to the deposits at Rancho La Brea numerous bones of Pleistocene birds from Potter Creek, Samwel and Hawver caves in northern California have added to our list of extinct birds, while more recently there has been found a second deposit of bones in asphalt near McKittrick, California, from which have come additional data.

Between the birds of the Cretaceous and those of the Pleistocene that have just been mentioned intervene many interesting forms. Among those recorded from the Eocene of North America one of the strangest is the huge *Diatryma steini*, named in 1917 by Matthew and Granger from a skeleton, nearly complete, found in the Badlands of Wyoming. This was a flightless running bird, standing more than six feet in height, with a heavy body and a strong bill. From the Eocene of Utah the writer has described a shore-bird ancestral to the Avocet, and two curious Auk-like forms that seem to have combined in a measure the longer legs of shore-birds with the form and habits of Auklets.

In many cases fossil birds from the Eocene have been somewhat uncertain as the bones are so crushed and distorted that it is difficult to build up a clear picture of their form. From the succeeding Miocene and Pliocene deposits have come much more perfect material that has proved far more satisfactory to study.

The Sheep Creek and Snake Creek beds in northwestern Nebraska under exploration by parties from the American Museum of Natural History, supplemented by material secured by Mr. Harold Cook, by Princeton University, and the Carnegie Museum have yielded an interesting avifauna from which the writer has described a number of new forms. In these remote ages there was apparently in this region a badlands area over whose cliffs soared Eagles of the genus *Geranoaëtus*, today confined to South America, Hawks on the order of our Red-tailed Hawks, another form related to the modern Mexican Black Hawk, and a Kite, while from wooded stream borders below came the harsh calls of Chachalacas and the screams of tiny Parrots related to, but much smaller than, the modern Carolina Paroquet.

From the diatomaceous beds of Miocene age near Lompoc, California, Loye Miller has named Shearwaters, Boobies, Auklets and Godwits all closely allied to living forms. And in deposits in southern Arizona recorded as late Pliocene age I have found a tiny Goose of the group that includes our Canada and Hutchins' Geese, but no larger than a Duck, a Tree-duck, some shore-birds, Pigeons and fragments of an Ocellated Turkey.

It will appear from what has just been said that there has been much recent activity in the study of avian fossils so that on assembling the material for the fossil list of the fourth edition of the A. O. U. 'Check-List' we find that it now includes 149 species, more than double the number given in 1910. Material now in press will increase the total to a still greater figure before this list is published. In addition to these there are now known 107 species of our living birds whose bones have been found in Pleistocene deposits which should be included in the fossil list if it is to present a true picture of knowledge of our ancient avifauna. The total thus is increased to more than 250 forms.

Our knowledge of our Pleistocene avifauna while considerable is still very incomplete and will be augmented materially by future investigations. It may be noted that search among cave deposits in this country has received as yet comparatively slight attention except in a few localities, and will when exploited unquestionably prove a fertile source of data regarding Pleistocene occurrence of modern birds and may reveal forms now extinct. Such has been the history of similar studies in western Europe.

The known fossil species in our present list may be divided under several headings aside from their systematic classification. Among the species of the Cretaceous period the toothed birds have naturally attracted the greatest attention because of the form of their jaws. One group of these, *Hesperornis* and its allies, includes diving birds, flightless species of Loon-like or Grebe-like habit some of which were of considerable size. In these the teeth were in grooves. A second group—*Ichthyornis*—with teeth in sockets included Gull-like or Tern-like species of moderate dimensions with excellent powers of flight.

Mention has been made of *Diatryma steini* and other birds of the Eocene period. The few known species of this age are peculiar, and in some cases are unique types. Some, however, are suggestive of modern families and seem ancestral to existing families or subfamilies.

Beginning in the Oligocene we find birds of decidedly modern type though differing considerably from existing relatives, and finally in the Miocene, two or more million years ago, appear birds so closely allied to our modern species that in many cases they may be assigned to living genera.

Coming to more modern times let us transport ourselves for a bird walk of a few hours to view the wonderfully rich avifauna of the Pleistocene. Before our eyes Strange Grebes, huge Swans, and curious Geese, some large and some tiny, swim in lakes and ponds in company with more familiar Mallards, Gadwall, Teal and Shovellers. Storks and Herons, some extinct and some of species still living, stalk about in marshes or stand silently watching for their prey. Gulls and Terns circle in flocks above groups of Snipe, Sandpipers and Killdeer, mainly of familiar form but with a few strangers in their ranks. Vultures abound, in number of species exceeding what we find in Africa today, and including at least one bird, the great *Teratornis*, with a wing spread eclipsing that of its companion Condors. Eagles and Hawks soar among the hills or over the plains, and Falcons dash through flocks of smaller birds in search of prey.

Flocks of Quail appear among the bushes, with Sharp-tailed Grouse and Prairie Chickens on the plains, and Ruffed Grouse and large Turkeys in the woodlands.

A few Red-shafted Flickers are noted, with Horned Larks, Crested Jays, Crows, Ravens, Meadowlarks, Red-winged and Yellow-headed Blackbirds, a Shrike and a form of Brewer's Blackbird. There are in addition Towhees, and a host of little Finches always (as yet) too dimly seen to be identified. The Burrowing Owl stands at the entrance of its tunnel, the Short-eared Owl flushes from marshy meadows, and Long-eared Owls rest hidden in dense thickets. At nightfall comes the call of the Barn Owl and the Great Horned and Screech Owls from the canyons. Our list for such a day on present information would compare favorably with one made under modern conditions. When the avifauna of the Ice Age and of the latter part of the Tertiary is better known we shall unquestionably find it much richer in species than is the case in present times since the greater part, if not all of our modern forms, were then in existence contemporaneously with many peculiar birds that have become extinct.

The zoogeographer attempts to explain the distribution and evolution of modern bird life on presumption based on present occurrence, but only from fossils may we hope for wholly certain information on this subject. Our knowledge of the bird-life of prehistoric periods is wholly imperfect but is growing steadily. From the mass of fragments that is being laboriously assembled we may hope to prepare eventually a mosaic that will picture at least the important phases of the evolution and the former distribution of our birds.

U. S. National Museum.

NOTES ON THE BIRDS OF SOUTHEASTERN ALASKA.

BY ALFRED M. BAILEY.

(*Continued from p. 23.*)

(*Plates VIII–IX.*)

Mergus americanus. MERGANSER.—

Mergus serrator. RED-BREASTED MERGANSER.—These two species occur in the same range and are so often noted together that it seems advisable to discuss them under the same heading. They are both residents, being more or less common throughout the year among the northern islands, at least. They are especially fond of tide water streams, and it is the usual sight to see a string of one species or the other working through the narrow passes on the change of tide, flying low over the water with great speed. Their flight is direct, and unless greatly alarmed, they do not swerve from their chosen course, as is so characteristic of fresh water ducks. Both species were abundant at the mouth of the Stikine in April, where they worked back and forth along the channels through the extensive delta. It would be difficult, except during the breeding season, to go afield without seeing either, or both species. They were common in Glacier Bay in June; a flock of a dozen male Mergansers was noted on one of the little fiords of Willoughby Island, and both forms were seen in Bartlett Cove. August 9 I saw an old Red-breasted Merganser with her brood of nine three-fourths grown young far up the creek which drains into Bartlett Cove. They were not wild, although they started pattering over the water when they first sighted me; on the following day, in a little stream coming in at the right of Berg Bay, I saw another female with a flock of youngsters about the same size. I was following along a bear trail skirting the creek, well concealed in dense alders, when I heard a sudden commotion in the water below. I worked to an advantageous place and enjoyed watching the old bird feeding her young. They were almost as large as the mother, and as she would dive for trout, all the young would start flapping over the water after her, so when she came up, the whole band was there, each mouth open, and every bird begging with throaty hisses and flapping wings. I saw her throw a trout at least six inches long down one gaping maw, and immediately dive; when she came up, all the babies were awaiting her, and so eager were they, that the old bird climbed on to the bank as though to escape their flapping wings, and to look them over before feeding.

Lophodytes cucullatus. HOODED MERGANSER.—I have not observed this species in the field, but wish to record an adult male taken near Eagle River in March, 1919, which was left with the local taxidermist, Breezee,

to be mounted. It was a beautiful, high plumaged bird. Mr. J. S. Young, who was usually my companion afield saw three birds, two males and a female, in the entrance to Tracy Arm, near Sumdum April 20. As Young is familiar with the birds of the region, as well as with the species in question, I have no hesitancy in recording the birds.

Anas platyrhynchos. MALLARD.—An abundant species, especially during migration and the winter months, and they breed locally throughout the region, all the extensive flats with fresh water streams are favorite haunts of the Mallard, and when the chill winds of winter come, and the flats are frozen over, the flocks congregate along these little streams for food and protection. The species was very common in Big John Bay, Keku Strait, November, 1919, and in March the following year. A flock of over one hundred birds hung about Salmon Creek near Juneau, all of January and February, where they picked a living among the mussel and barnacle beds. The old barnacle-eating Mallard of Alaska is a far different bird from the rice fed ones of the Gulf Coast, and compare about as favorably as a Scoter and a celery-fed Canvas-back, so far as eating goes. The Mallards breed on the small fresh water ponds all along the coast. I ran across an old male near Mendenhall Glacier June 4, and feel sure his mate was near, from his antics. Five young, scarcely able to fly, were seen in Berg Bay, Glacier Bay, August 9, as they fed among the grasses at high tide. Kootznahoo Inlet is one of the best "duck grounds" along the coast; this great shallow inlet is ideal for the many species of water birds, and Mallards were extremely numerous there the latter part of October.

Chaulelasmus streperus. GADWALL.—A pair was noted at Bartlett Cove, Glacier Bay, August 9. It was fairly early in the morning, with the light at my back, so I could not have mistaken them, as they were close enough to collect had I other than the rifle. I felt sure I saw a small band at Holkham Bay September 25, but the light was not good enough to make the identification positive.

Mareca americana. BALDPATE.—These birds were fairly numerous in the large flocks of Mallards in Big John Bay, Keku Strait, November 18–24, 1919; they were next noted in Hooniah Sound, May 7–24, when a few were occasionally seen, usually in company with Mallards or Pintails. One male was seen on the Mendenhall Bar, June 3. None were seen during the summer months, and the first were recorded in the fall at Holkham Bay near Sumdum, September 26. They were fairly common, some with other ducks, and there were a few small flocks composed entirely of Widgeon. They were also quite plentiful in Seymour Canal, September 28–30, and a good many were seen in Bartlett Cove, October 10; many were noted in Kootznahoo Inlet, October 27.

Nettion carolinense. GREEN-WINGED TEAL.—This is not an abundant species; in Keku Strait, November 18–24, 1919, they were fairly numerous, and a few birds were seen on practically every trip to Salmon

Creek, near Juneau, during the month of January. A dozen birds were seen near Douglas Island shore January 22. Several flocks were observed in Hooniah Sound, May 7–8, with a few individuals during the dollowing week. The first were recorded in the fall at Tracy Arm and Holkham Bay September 26, when a few were seen, and a small band was noted in Seymour Canal September 29. They were rather common in Bartlett Cove, October 10, and a few were seen in Kootznahoo Inlet October 26–27.

Dafila acuta tzitzihoa. PINTAIL.—Fairly numerous during migration, and a few winter, but they can not be considered common. They were first noted in Big John Bay, Keku Strait, November 17, 1919 (five birds); one was seen at Juneau on the Salmon Creek bar in company with Mallards January 2. I believe any birds wintering among the northern islands are stragglers, for I think the majority move far south. They were next seen in Hooniah Sound May 7–24, at which time they were abundant, for the first few days at least; several large flocks of fifty or more passed over our camp, a few of which were composed entirely of females. Small bunches of a dozen or so loitered at the head of Patterson's Bay, where they fed in the fresh water mountain streams, and rested upon the sand bars. The last for the spring were in Mendenhall River, June 5, a small flock upon the tide flat. Several flocks were noted in Bartlett Cove, Glacier Bay, August 9; they were common in Holkham Bay, September 26–28, in Seymour Canal, September 28–30, in Bartlett Cove, October 10, and a few birds were seen in Kootznahoo Inlet the latter part of October.

Marila marila. SCAUP DUCK.

Marila affinis. LESSER SCAUP DUCK.—These birds are abundant during the winter and early spring. Because of the similarity of the two species, it is next to impossible to make field identification positive, and consequently few definite records for *marila* have been made. During January, there were a good many in the large flocks of *affinis* in Gastineau Channel; two males were taken January 30, and a few more were seen in Oliver Inlet, February 3–9, and at Juneau up to March 20. One specimen was taken in Glacier Bay, October 10. The Lesser Scaup Duck is very abundant in winter, and several hundred worked Gastineau Channel within the limits of Juneau, during January; their favorite feeding place seemed to be along the edges of a great mud bar, which is used by the city as a dumping ground. The blue-bills became very tame, and would come in on the high tide to pick barnacles from the piling. They were accustomed to boats and often swam within gun range of the large passenger steamers at the dock. They were equally numerous in the vicinity of Wrangell and Petersberg. At Hooniah Sound, in May, only a few were noted, and these in company with the great hordes of Scoters. They return rather late in the fall, the first being seen in Holkham Bay, September 25. when a pair was noted; one hundred or more were in one flock in Seymour Canal, September 28, and several big bands were noted in Stephens Passage near Douglas Island, October 7, and again the 24th. They were fairly common in Kootznahoo Inlet October 26–27.

Marila collaris. RING-NECKED DUCK.—In one of the broad arms of Kootznahoo Inlet, on October 27, I saw a flock of 25 birds which I was positive belonged to this species. They were resting upon the water, out of gun range, but with the glasses I could see the white tips on the bills of the males. Both sexes were represented in the flock. I should hesitate to include this record, except I am familiar with the bird of the Mississippi Valley.

Clangula americana. GOLDEN-EYE.—Fairly abundant during winter, and may be noted daily among the northern islands, along all the salt water streams, especially where the channels are narrow and the tides run swiftly. They are very conspicuous in flight, and the musical whistle of their wings is one of the pleasing features of winter work along Alaskan waters; they are rather shy, seldom flying low over the points, and usually feed well in the center of the channels. The young resemble the White-winged Scoters in their winter dress, or the young birds, and when at some distance, it is almost impossible to tell them apart. Golden-eyes were noted daily in Keku Strait, November 18–24, 1919, and specimens were collected; they were seen daily in Gastineau Channel in January. They often fed over the big bar within the city limits of Juneau, and I could watch them from my window when the tides were high. They were abundant in Oliver Inlet, February 3–9, and were seen daily in Keku Strait, March 3–5, and at Craig and Klawack March 10; they were noted daily at Juneau from March 20 to April 10, although only a few in comparison to those seen during the winter. A few were at Wrangell April 11–18 and in Wrangell Narrows April 26. Others were seen in Hooniah Sound, May 9–24. The first fall records were at Seymour Canal September 28, when a flock of a dozen birds was noted; a few bunches were in Young's Bay, October 7–9, and they were rather abundant in Bartlett Cove, October 10. Several small flocks were seen in Kootznahoo Inlet, October 26–27. This species is not as common as the Barrow's Golden-eye.

Clangula islandica. BARROW'S GOLDEN-EYE.—This species proved fairly common in the vicinity of Juneau during the winter; young birds were especially noticeable, as they were quite tame and fed about the wharves on the high tides. The habits of the two Golden-eyes seem to be similar, in so far as I am able to judge; both have the musical whistle of their wings when in rapid flight, they are both excellent divers, and are wonderfully beautiful birds, either upon the wing or upon the water. They were to be noted daily along Gastineau Channel during January. Adult birds were shy, but the young, as noted above, were very tame. The high plumage of the males seems to be present the whole winter. They were common in Oliver Inlet, February 3–9, and seemed to follow the tides in the swift flowing channels as they worked the rocky shores for food; only a few were noted in Keku Strait, March 3–5, and at Craig and Klawack, March 10. Willett told me full plumaged males were

scarce in that vicinity, so it seems they prefer the northern islands. At Hooniah Sound, May 7–24, they were abundant, much more so than the former species; a whole flock of them would settle in a little pocket along some bar, and there seemed content to rest sheltered from the blowing winds. They were first recorded in the fall in Glacier Bay, October 10, when several dozen were seen, and they were observed commonly the next three days. They were plentiful at Wrangell, December 30, and were noted near Juneau regularly during January and February, 1921.

Charitonetta albeola. BUFFLE-HEAD.—These birds are very common during the winter and early spring, and are to be noted on all favorable waters; they are especially fond of inland bays, where sheltered from the wind, they secure an abundance of food. To give records for the species during the winter would be repetition for they were common throughout the islands until May, when only a few were noted in Hooniah Sound. The last of the spring was a male observed at Mendenhall River, June 3. The first were seen in the fall at Young's Bay, October 7, when several dozen took shelter in the harbor from the blowing southeaster. Several were noted daily in Glacier Bay, October 11–24, and they were abundant in Stephens Passage and Chatham Straits, October 24, and were observed commonly again throughout their range after that date.

Harelda hyemalis. OLD-SQUAW.—Old-squaws are abundant in winter along all the inland channels, and are sometimes to be seen in large flocks. They are usually shy, taking wing readily, but they are easily identified when one once becomes familiar with them; they are exceedingly swift fliers, and excellent divers, so a wing-tipped bird is almost sure to elude the hunter. They rarely feed along the shores, but are usually heard far out in the channels, so far they can not be seen, yet their clear, characteristic note carries readily. I found the birds very common until the first of April, and after that but few were seen; a small flock was noted at Wrangell, April 15, and another in Wrangell Narrows, April 16. Eight were seen in Stephens Passage, June 10, and two males and a female, in very worn plumage, were taken. Several hundred birds were seen in Holkham Bay, September 25, and a dozen in Stephens Passage 7 and 9, and others in Icy Strait October 10. They proved abundant in Glacier Bay the following day, and from that time on during the following winter, they were very common throughout their range.

Histrionicus histrionicus pacificus. WESTERN HARLEQUIN DUCK.—This is a common bird throughout the year. I have noted them on practically every trip, and found that their favorite feeding places are along rugged, reef-lined shores where the tides flow swiftly. They were first observed in Oliver Inlet, February 3; flocks of them were working slowly along the reef cluttered shores, or resting upon the rocks. They were quite tame and allowed us to approach closely. A few were seen in Excursion Inlet, and a breeding pair taken, the female containing well

developed eggs, one of which was nearly ready to lay. A half dozen moulting males were taken on Glass Peninsula, Admiralty Island, September 1, and several full plumaged birds in Kootznahoo Inlet, October 26. These little fellows are extremely swift upon the wing, and seem to be very small bodied, flying with fast beats of the wings, and with head and neck tilted at a slight upward angle. When shot at, they usually prefer diving to flying; fortunately, this is not a good food bird, and consequently it is little persecuted.

Somateria v-nigra. PACIFIC EIDER.—Noted only in Glacier Bay. Two females were seen June 16 near Beardslee Island; these birds passed over the bow of the boat, within fifteen feet of me, so I had a good look at them. On June 19, when returning from Muir Glacier, a pair passed us. The handsome colored male was very noticeable, and there can be no doubt of its identity. Dr. Borland, of Hooniah, sent me a male killed by a native in Glacier Bay in June, and I noted a pair of birds twice in October, once near the mouth of the bay, October 10, and on the following day on the outer Beardslee Island. This pair was in company with a flock of Golden-eye, back in a little pot-hole formed by the high tide. The male stood out conspicuously, even when with the light-colored Golden-eyes.

Oidemia americana. SCOTER.—This is a rather uncommon bird. I first noted them in Taku Harbor, November 15, 1919, when a few were seen; two were observed at Wrangell February 28, one at Klawack, March 10, four in Hooniah Sound, May 19, and they were faily abundant near Beardslee Island in Glacier Bay in June, and also August 11. During the fall they were more common, a dozen being seen at Midway Island in Stephens Passage, September 25, and several in Holkham Bay the following day; a dozen or more were noted daily in Seymour Canal the latter part of September, a small flock in Icy Strait October 10, and they proved fairly numerous during the next few days in Glacier Bay.

Oidemia deglandi. WHITE-WINGED SCOTER.—

Oidemia perspicillata. SURF SCOTER.—These are the most abundant of the water birds among southeastern Alaskan islands, and are to be noted in great flocks except during the nesting season, and even then, there are enormous numbers of non-breeders congregated in favorable places. It would be useless to give dates and localities where records were made. Many young birds in their inconspicuous grey plumage were seen in November (of both species). Non-breeding birds were in large flocks in Canoe Pass, June 10, and Glacier Bay, June 12–29, and moulting birds were in hundreds in Glacier Bay, August 8–15, at which time they had lost the power of flight.

Chen hyperboreus hyperboreus. SNOW GOOSE.—But few of this species were seen. I spent from April 18–22, in Sergief Island at the mouth of the Stikine River, and two flocks of Snow Geese (about 45 in all) were seen the first day, as they worked back and forth across the slough

ground; a flock of twenty passed over April 19, without making a pretense of landing. No other Snow Geese were seen.

Anser albifrons gambeli. WHITE-FRONTED GOOSE.—Noted only in Hooniah Sound during the spring migration in May. On the evening of May 8, I jumped one from a tide-water slough; a few were seen the next day on the bar at the head of Patterson's Bay, feeding in company with "ring-necked" geese, six were noted May 11, and nine the 17th. The latter were also at the head of Patterson's Bay, upon a sand bar. When first seen, they seemed so small I mistook them for Mallards, but on my approach, instead of standing awhile, and then flushing as Mallards usually do, these fellows took to the water and swam away. Through the glasses I identified them, and in their company was a Cackling Goose, as was evident from its small size. The White-fronted Geese were not common at any time.

Branta canadensis subspecies.—Migrant Geese were common in Hooniah Sound, May 7–8, when a dozen large flocks were seen enroute northward, or resting upon the big gravel bar by our camp. Those noted the first few days were flying directly up the sound, as though in a hurry, while the Geese seen later were content to loiter about the bars, taking gravel, and when flushed, they merely moved to a distant bar; they were wild, however, and it was with difficulty that I secured two specimens with the rifle. One was a large bird which I took to be *canadensis;* the other was much smaller, and would undoubtedly be considered as *hutchinsi.*

Branta canadensis occidentalis. WHITE-CHEEKED GOOSE.—This subspecies has been considered as a non-migratory bird, and local to southeastern Alaska. It would be difficult to prove this contention without years of careful observation, for who can say the birds wintering do not move northward in May, and others from the southward take their place as the local breeding form. It would be extremely difficult with migrants passing, or dropping upon the bars, for one to keep track of even bands of birds, and say they remain throughout the year. And then, this species would be the strange exception if it was strictly local, for our North American Geese usually winter a considerable distance from their nesting ground; I do not believe we are justified in considering it a non-migratory bird without more data on the subject. It is not an uncommon thing to have a species present in a given locality the year around—but we know the individuals are not present throughout the twelve months. The breeding birds move southward, and northern nesting forms take their place for the winter. On the other hand, my friend George Willett, whom I consider one of the most competent of field observers, believes the species a local one, and feels he has observed a family throughout the summer, fall and winter. However, be that as it may, a large Goose, designated as *occidentalis,* is present the year around. They rear their young in the fresh water lakes of the islands and mainland,

and during winter time, a given band will be found using the same locality more or less regularly. I first noted them in Big John Bay, in Keku Strait, November 18–20, 1919, when several hundred were seen in different flocks. Three specimens were collected, large heavy birds in extremely good condition, showing they secure a wealth of food to their liking. Large flocks were seen in the same locality, March 3–5, as they worked from one feeding ground to another, and one specimen was taken. From my notes of the trip I find, "It seems there are two large flocks of one hundred or more birds each in Keku Strait, one company using the territory adjacent to Big John Bay, the other the end of the pass near Sumner Strait. When feeding, these bands split up in bands of ten or more, possibly family groups, but in the evening, all the small flocks assemble with each bird calling as though to guide stragglers in the rear. The Geese were exceedingly wild and rarely used the same route twice in succession, so one could not successfully intercept them in their flyway." A few small flocks were noted in Dry Pass and El Capitan, and again on the Stikine Flats, April 18–22. Although geese were numerous in the latter place, I had difficulty in securing six specimens. There were many birds in Hooniah Sound which were paired, and I felt sure these were the local nesting geese. Breeding birds were noted rather commonly in Glacier Bay, June 12–22, along the west shore. There is a great valley on the east mainland shore, above the Beardslee Islands, and on August 12 my companion, George Folta reported nesting Geese, and said that he had seen young birds the size of Mallard Ducks. Geese were very numerous at Mud Bay, Chichagof Island, in October, but I am told these were migratory birds. I did not collect specimens during the fall.

Branta canadensis minima. CACKLING GOOSE.—First noted in Hooniah Sound, May 7, when several flocks were in migration, or resting upon the bar near the entrance to Patterson's Bay. There must have been over two hundred birds passed our camp on this date, and as many more the next day. One flock had, according to my count, 97 birds. These little fellows are often in company with large Geese, but usually they preferred to flock by themselves. They do not look larger than Mallards at times, and the difference in their call from other geese is plainly noticeable. They were extremely wary, and I was unable to secure specimens. I saw a large band on one of the Beardslee Islands, close to Bartlett Cove, in Glacier Bay on October 11. The natives said there had been a few small Geese about for a week or more, and it is probable they referred to this species.

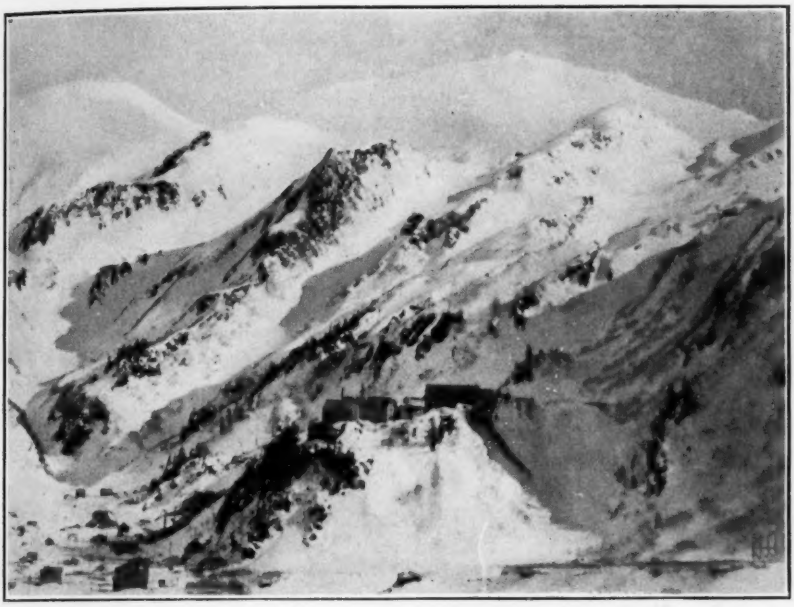
Philacte canagica. EMPEROR GOOSE.—Mr. Rudy, of Juneau, told me he killed an Emperor Goose on the Mendenhall Bar in 1916; he stated he was well acquainted with the species, having hunted them in Bristol Bay, and in volunteering the information, he called the birds by name. Little collecting has been done on the outside islands, and when it has, I believe this species will be found more or less commonly.

Olor columbianus. WHISTLING SWAN.—A flock of 25 was seen October 15 as they flew down Icy Strait, and passed over Point Couverton. Dick Harris, my boatman, told me he saw a flock of about the same size at Sumdum, Holkham Bay, at about the same time of the year, in 1919.

Ardea herodias fannini. NORTHWESTERN COAST HERON.—This species was first seen in Keku Strait, November 22, 1919, and at Wrangell a few days later, when another was noted along the beach; a bird was about the waterfront daily, and according to the fishermen, remained all winter. I saw it again, or another, February 26, and one at Craig, March 12. Willett told me they are not uncommon in that vicinity. At Wrangell, one bird was seen April 12–13. On each day it came from down channel, high in the air as though intent on passing over the mountain. When midway over the highest hill, it suddenly swerved, and came tumbling out of the air in that way so characteristic of birds dropping into their heronry in the evening. Noting birds do the same thing on two successive days, alighting in the same place, lead me to believe this pair must be nesting on the mountain side, so I endeavored to locate the nest, but to do so would be like finding the proverbial needle in the haystack. These birds must nest in very small numbers in a given locality, possibly each pair alone; Willett told me of a friend who found a nest with young in the thick woods, and the pair was nesting alone. I collected a female with very large ovaries in Glacier Bay on June 16, on the outer Beardslee Island. Two others were noted flying from the island, high over the channel toward the distant mainland shore. That these herons nest in the vicinity I am positive, for birds were seen daily August 8–15. Five were seen August 8 in Bartlett Cove, evidently a family group, with four immature birds following the old one. A fisherman had told me that he had seen a small colony of Herons nesting in the spruces on one of the Beardslee Islands, but we were unable to locate them. Two birds were seen in Kootznahoo Inlet, October 27.

Grus canadensis. LITTLE BROWN CRANE.—A flock of eight birds was seen over Wrangell February 29, flying south from the general direction of the Stikine River.

Lobipes lobatus. NORTHERN PHALAROPE.—Very abundant during their fall migration, especially in the vicinity of Glacier Bay and Icy Strait. Great flocks were assembled near the mouth of Glacier Bay, August 8–15, where they were feeding upon the water like so many Murrelets. Their nervous antics with bobbing heads, and the quick turning of their bodies is characteristic, and a flock of these little fellows may be identified at a long distance, even when one can not make out a definite form. They like to feed among the high rolling tide-rips, where the currents have carried debris, and flocks will rise before the boat when the waves are breaking white; again, when the water is smooth, they will be congregated about tide-lines, where a line of scum seems to be collected, and feed away for all they are worth, apparently oblivious to all else. My first records



1. SILVER BOW BASIN, NEAR JUNEAU. PERSEVERANCE MINE IN FOREGROUND.
2. A MOUNTAIN GLACIER, HEAD OF LEMON CREEK NORTH OF JUNEAU.
DIXON'S PTARMIGAN LIVE IN THESE LOCALITIES.

UNIV. OF MICH.

were in the bay June 12, when a small flock was sighted near Willoughby Island, and the next at Forrester Island, July 18 and 21, when possibly two hundred were seen off the northern end. August 8 they were very common off Point Augustus, in Icy Strait, and at the entrance to Glacier Bay. One was seen in Stephens Passage near Douglas Island, August 25, and one was collected in Gastineau Channel, September 8; four were noted in Holkham Bay, September 25.

Gallinago delicata. WILSON'S SNIPE.—Not common. The first was noted on the Stikine Flats, April 20, and another was flushed from a garden within the city limits of Wrangell April 24. Two were seen in Hooniah Sound, near Patterson's Bay, May 8. I collected a specimen in Holkham Bay, September 27, on a beautiful little sand island, which resembled a cay of the Gulf Stream, and I was so surprised to find the bird in such an unlikely spot that I ruined it by shooting too quickly. Two were seen in Glacier Bay, one on Beardslee Island, October 12, and the other in Sandy Cove two days later.

Macrorhamphus griseus scolopaceus. LONG-BILLED DOWITCHER.—Ten of this species were seen on the bar at the entrance to Patterson's Bay, in Hooniah Sound, May 16, and I collected three. A few were on the bar in company with other waders, May 17–18 and 20, but none were observed after that. They were in high plumage. They fed about the bar, probing here and there with their long beaks like so many "jack snipe." Only one other was noted, on the mud bar at the mouth of the Mendenhall River, June 3. Willett told me he collected several near Craig in May, and that they were fairly plentiful.

Arquatella maritima couesi. ALEUTIAN SANDPIPER.—Fairly common. I collected a crippled bird on the Mendenhall Bar, January 16. The bird had a badly broken leg, and a large sized shot was found lodged in the thigh. On Suemez Island, one was noted with a flock of Black Turnstones, March 11. Large flocks were on the Mendenhall Bar, being noted March 26 and April 2, at which time specimens were taken. These birds had been seen from Frebuary 1 on, but I had been unable to approach close enough to collect or identify them. There were about one dozen birds on Skull Rock in company with Black Turnstones and Surf-birds, August 23, and several flocks were on the reefs off the north end of Douglas Island August 25. Several were noted in Holkham Bay with Turnstones and Sanderlings, September 25 and 27, five were on Skull Rock, October 7, and two were seen in Kootznahoo Inlet, October 27. These birds are fairly common around Craig, according to Willett. They are tame, usually, and owing to their habit of swarming together in large flocks, make easy shooting for the pot-hunter.

Pisobia maculata. PECTORAL SANDPIPER.—Seven birds were seen in Hooniah Sound at the head of Patterson's Bay, where they were feeding about the little fresh water ponds formed by melting snow. They remained until May 20; one was noted in Seymour Canal, September 29.

Pisobia bairdi. BAIRD'S SANDPIPER.—I collected one in Hooniah Sound, May 17, and although no others were seen, it is quite probably they were included in the large number of Sandpipers seen in migration. There were a few shore birds on a little point close to the ice-wall at Muir Glacier, August 12, and the one I succeeded in taking was an immature individual of this species.

Pisobia minutilla. LEAST SANDPIPER.—Rather plentiful at the head of Patterson's Bay, Hooniah Sound, from May 7–24, where they hung about the little fresh water ponds. None was noted on the sand flats among the Western Sandpipers. These little fellows were very tame, allowing one to approach within a few feet, and if one sat quietly along the edge of their feeding place, they would soon be running about, apparently without fear.

Pelidna alpina sakhalina. RED-BACKED SANDPIPER.—First seen in Keku Strait, November 19, 1919, when three were collected from a flock of about 30; three were noted at Salmon Creek, January 11, and a small flock again in Keku Strait, March 5. There were several large bands about Juneau from February 1 on, but no specimens were taken until March 20, when this species and Aleutian Sandpipers were taken from the same flocks. All were in winter dress. They were common in Hooniah Sound, May 7–24, being especially abundant May 12, and a good series was collected. All were in high plumage.

Ereunetes mauri. WESTERN SANDPIPER.—Very common in Hooniah Sound from May 7–24, and they were still plentiful at the time of our departure. They associated with other species more or less, but large flocks could usually be seen swirling white against the light, and again seeming to disappear. A small flock was seen on Mendenhall Bar, August 7, in company with a band of Sanderlings.

Calidris leucophaea. SANDERLING.—A small flock was noted on Mendenhall Bar, August 7, and 25 or more were seen at Holkham Bay, September 25–27. A few were on a little sand island the latter date in company with Black-bellied Plover. The place these little creatures chose as a resting spot was a beautiful one, for the rugged mountains were capped with snow, and the grim Sumdum Glacier seemed suspended on the mountain side, as though threatening anyone stopping below, while the channels and shore lines were choked with ice. It seemed incongruous to see a flock of these dainty little creatures feeding in the shadow of a large berg stranded on the high tide.

Totanus melanoleucus. Three birds dropped among my Goose decoys on the Stikine Flats, April 22; they came in so suddenly I was unaware of their arrival until their outstretched wings "banked" for the drop to the flat. A flock of a dozen birds was noted with a few Lesser Yellowlegs on the bar in front of our camp in Hooniah Sound, May 7, and another band of similar size came in a week later, from which a few birds were collected. Seven birds were seen August 7 on Douglas Island, about opposite Salmon Creek, as they were feeding along the beach.

Totanus flavipes. YELLOW-LEGS.—Several small flocks, possibly 25 birds in all, were on the bar near our camp in Hooniah Sound, May 7–9. They were remarkably tame, and when approached, they simply ran over the bar, not taking wing until almost forced into the water.

Helodromas solitarius cinnamomeus. WESTERN SOLITARY SANDPIPER.—One was noted at the head of Patterson's Bay, Hooniah Sound, May 10.

Heteractitis incanus. WANDERING TATTLER.—Not noted in flocks, three birds being the most seen at one time. One was observed on Forrester Isl. July 19, three along the shores of Lynn Canal, a few miles below Tee Harbor, August 25 (two of which were collected), and another was taken on the Mendenhall Bar, September 8. Two others were seen during the fall, one at Grand Isle, Stephens Passage, September 25, and the last on Skull Rock, October 7. The specimen collected on the Mendenhall Bar was the only one observed on sand, all the others having been on rugged, rocky shores.

Actitis macularius. SPOTTED SANDPIPER.—First noted on May 15, in Hooniah Sound near our camp; this pair hung about daily, and four birds were seen May 20. The species was common after this date, and seemed especially abundant along Gastineau Channel in June. They were seen daily in Glacier Bay June 12–20 and were fairly common upon the moraine in front of Muir Glacier. I found a nest with the four eggs barely above high tide mark, in Berg Bay June 15. One was seen on Forrester Isl. July 19. I do not find records of later observations, and think probably this is due to carelessness on my part, rather than the birds had departed so early.

Numenius hudsonicus. HUDSONIAN CURLEW.—Hooniah Sound is evidently a favorite migration route of northern nesting birds. Fourteen of this species were observed near Patterson's Bay May 17, and on the following day, five bands passed up the bay, that we noticed, and many others must have followed the distant shore. Two females, very thin with undeveloped ovaries were taken and two others, May 19, from a flock of eight; five males and a female were collected May 22. This last flock was the only one seen feeding, the other birds all being in migration. They were tame as they worked over the kelp covered rocks. A small flock was seen over Bartlett Cove, Glacier Bay, October 10.

Squatarola squatarola. BLACK-BELLIED PLOVER.—Several birds were upon the bar in front of our camp in Hooniah Sound during our entire stay, from May 7–24. They were very tame, and rarely flew any distance when they were flushed. Nine were noted on a sand island in Holkham Bay, September 27.

Charadrius dominicus fulvus. PACIFIC GOLDEN PLOVER.—Very few were seen, and all records were made near Patterson's Bay, Hooniah Sound. Four were observed May 16 in company with an equal number of Black-bellied Plover, and a fine female with enlarged ovaries was taken.

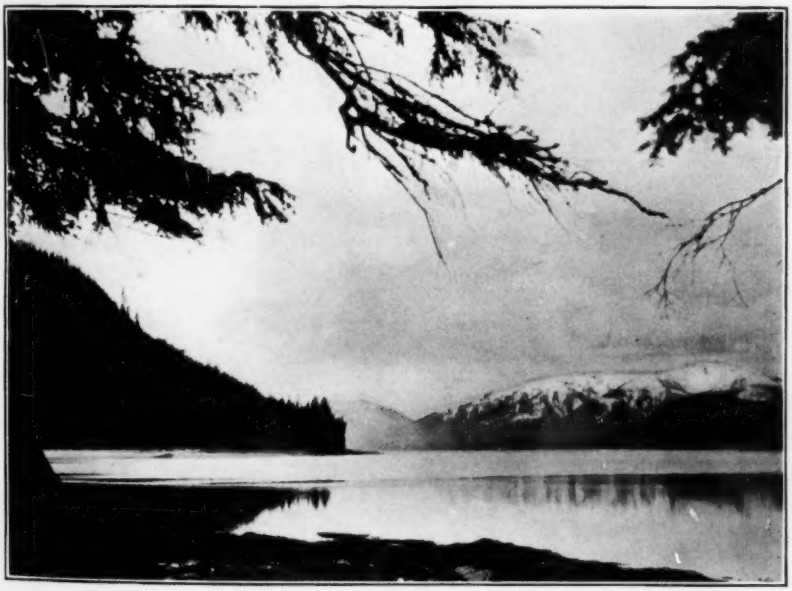
Another was collected from a band of six on May 17, and one bird was noted the following day. Willett had not taken any Pacific Golden Plover during his seven seasons work, and considered them rare.

Aegialitis semipalmata. SEMIPALMATED PLOVER.—A small flock was present on the bar near Patterson's Bay, Hooniah Sound, on our arrival May 7, and bands continued to come in until they were abundant by May 12, and continued so until the time of our departure, May 24. A good many were in migration the first few days. They were very common in Glacier Bay, June 12–22, and were especially numerous on the glacial moraines, where they were nesting, as was proven by their antics. Some of the plover were working along the edge of an old glacier, and often ran upon its worn, dirt-covered slopes. Several pairs were found at the head of Berg Bay, and one nest was found June 15. The four eggs were evidently heavily incubated, and were laid in a little hollow in the ground rock, with a few straws to form an imaginary lining for the nest. This species also proved abundant near Taku Glacier in June, especially so in front of dead Norris Glacier, where they were nesting on the moraine. The nesting season was far advanced at the time of my visit, June 29, and one downy young was seen—a fellow with strong legs and lungs.

Aphriza virgata. SURF-BIRD.—Noted at Skull Rock, near Young's Bay, in Stephens Passage, August 23. There were large flocks of Black Turnstones, with a scattering of this species, and Aleutian Sandpipers. Five specimens, all males, were collected; they were in good condition, and exceedingly fat. In flight, they reminded me of the Willet, because of their habit of soaring over head on quivering wings, and their generally similar coloration. George Willett found this species wintering in the vicinity of Wrangell, and we saw possibly a dozen birds, January 3, 1921, at Shoemaker Bay.

Arenaria interpres interpres. TURNSTONE.—This species was seen in Hooniah Sound, near Patterson's Bay, May 16–17. As I failed to collect specimens, I should hesitate to record their appearance, except that I am well acquainted with the bird, and had a good opportunity to observe the three. They were in company with a small band of Black bellied Plover on both dates.

Arenaria melanocephala. BLACK TURNSTONE.—These birds are fairly abundant, especially on the reefs among the southern islands. They were first seen in Keku Strait, March 5, about 25 in a flock, and then two days later, about 50 were noted in Dry Pass; all were trying to crowd on a little rock at the same time, with a continual flashing of wings. They do not straggle in loose flocks when on the wing, but swirl this way and that in compact bands, each bird apparently being able to anticipate the direction in which the leader desires to go. Fifteen were noted at Klawack, March 10, and about as many more on Suemez Island the next day. A small flock was seen in Wrangell Narrows April 20,



1. YOUNG BALD EAGLE IN HIGH NESTING TREE, FORRESTER ISLAND, JULY, 1920.
2. HOONIAH SOUND IN MAY. ONE OF THE MOST BEAUTIFUL OF ALASKAN WATERWAYS.

and one in Hooniah Sound, near camp, May 14. About 200 formed one large flock on Skull Rock, with a few Surf-birds and Aleutian Sandpipers included, August 23, while but six were seen there October 7. On January 3 and 5, 1921, one hundred or more were seen in Shoemaker Bay, near Wrangell, and a dozen were seen in Hobart Bay the morning of January 16, and as many more the same afternoon, in Portage Bay.

Haematopus bachmani. BLACK OYSTER-CATCHER.—This species is a coast bird, usually being found on exposed rocky shores where the surf breaks white, and the roar of breakers can be heard for a long distance. Six were noted in Dry Pass, near Deweyville, March 8, as they rested upon one of the treacherous reefs in the boat channel, and two more were seen the next day in Sukkwan Narrows, not far from Ulloa Pass. I next saw Oyster-catchers on Forrester Island in July. There were possibly eight or ten pairs breeding, and often a dozen birds would be seen sailing over the water, more or less in single file, and again, when one happened to be climbing over the boulders of the rugged shore, he would be aware of a bird slipping quietly from some crevice, and flying away. It was in the middle of the breeding season, and both young and eggs were observed; the Oyster-catchers lay their two large eggs directly upon the rock, the nest lining being made of fine bits of stone. It is evident these little rock particles are put in place, for the nesting material is usually much finer than the surrounding chips. They delight in finding a little pocket, well walled-in with huge boulders, where they can nest undisturbed. The two eggs are rather large, and those I saw light-colored corresponding with the surroundings. The young birds too, are protectively colored, and they are almost invisible when they hug the rocks; Willett pointed out a great water-worn slab as being the home of a young one, and it took several minutes to locate the little fellow as he crouched in plain sight, in a small dark-colored crevice. The adults keep near their nest and try to lead an intruder away. Willett states the birds will lay a second set, if they lose their eggs, and often, even a third set, all the nests being in the same general vicinity.

Dendragapus obscurus sitkensis. SITKA GROUSE.—A common species. Their distribution presents one of the interesting problems, in that several of the large islands which would seem especially fitted, have none of this species, Prince of Wales apparently being one of them (see report of the 1909 Alexander Expedition). I have seen this species throughout the year; they were first observed on Kupreanof November 22, 1919, when two were taken; five were collected on Douglas Island, January 9, and another near Juneau two days later. They were noted or heard hooting at the following points: Oliver Inlet, February 5, Wrangell, February 29, and on Kupreanof March 5. Hooters were common on the hillsides near the Stikine and about Juneau the first of May. A female, evidently with young was seen at Point Couverton, June 11, as she continually clucked and I could see that her belly was bare. It may be

however, that her nest and eggs were near, and she was merely displaying anxiety. Males were heard in Berg Bay, June 15, and three birds were seen on Mt. Robert, above timber line early in September. Others were seen on the mainland during the same months at McGinnis Creek and Salmon Creek; six were above timber line in Seymour Canal, September 30, while others were observed on Point Retreat and Mt. Robert in October and November. The hooting habit of the males is well known, and they can be heard for a great distance. When several males are calling together, the air seems to vibrate; it is difficult to locate hooting birds, and when one is directly under them, it seems the sound comes from all directions. The birds are often so high they will not flush with the discharge of a gun; in fact, I have seen a Grouse sit within twenty feet of a gunner, who fired a dozen shots with a high power rifle in an attempt to shoot the bird in the head, without the bird seeming the least alarmed. In the early fall, many repair to the mountain tops with their broods, where they find ample cover among the dwarfed pines and dense alder thickets; then they drop to sea level during the cold winter months, and one will often see them below snow line, where the tide has cleaned the beaches. They feed on the hillsides, among the dead devil-club and berry bushes, and rarely fly when one passes. Although strongly tainted with the spruce, which makes up a great part of their food, the flesh of these birds affords a welcome addition to the camp-fare when one is afield.

Lagopus alexandrae. ALEXANDER'S WILLOW PTARMIGAN.—First noted in Glacier Bay, June 13, when a pair was collected on Willoughby Island. This island is about five miles in length, with scant vegetation, other than alder and stunted spruce. The knobs are devoid of plant life, and it is only on the terraces that soil can hold. The southern and eastern slopes are rather densely clothed with alders, however, and form ideal cover for Ptarmigan. Seven other birds were seen by Young, one of which was still in the winter white. The pair collected were breeding birds. In August, Ptarmigan were first seen at Sandy Cove, in Glacier Bay, when I rounded a point in a drizzling rain, looking for bear signs. A flock was flushed from a bed of wild strawberries, at an altitude of scarcely thirty feet, when I had expected to find them above timber line. There were several pairs of adults, as well as many young, and a good series was taken. An examination of crop contents proved the birds had been feeding entirely on strawberries and pea-vine, no alder or willow buds being found. After finding Ptarmigan in such a low altitude, I searched all the points along the east mainland shore, and did not fail once to find them, where there were berries. It was noticeable they preferred the points where they could feed close to a fringe of alder. On one of the Beardslee Islands, another series was taken, and on the outermost island, fully a mile from the nearest land, three others were flushed, and one taken. This proved a young one scarcely half grown, which brought up the interesting question whether the Ptarmigan were nesting

on these low-lying islands. It seems certain this is the case. In all, a good series was taken, showing young in all stages of plumage, as well as adults in summer dress.

I returned to Glacier Bay again from October 10–14, and observed the Ptarmigan under still different conditions. A stop was first made on the outer Beardslee, upon which the young bird had been taken. I was interested to see if the Ptarmigan had left the island, as it was now drab and dry looking, and the birds were assuming their winter's white. I found them very abundant, and over forty were flushed from the dense alders, and a few taken. They were extremely wild, as they should have been, for their changing plumage—entirely white below with many white feathers in head and neck, made them extremely conspicuous among the leafless alders. I had little chance to observe them, due to their wildness. Stops were made at two other points, not visited in August, and Ptarmigan were noted in both places. At Sandy Cove, October 14, I collected another series from the point they were first found in August. These were as conspicuous as the others, but when the flock was broken up, the birds did not flush so readily, and I had a chance to study them at close range. They ran over the ground the same as in August, evidently believing themselves inconspicuous, and when closely pressed, crouched quail-like and depended upon their "protective coloration." When the birds became scattered, several climbed into alders, about a foot from the ground, and sat hunched in some convenient crotch, where they were more evident than ever. I was surprised to find strawberries still abundant here, hidden under the mosses in shady places, and each of the specimens taken had its crop full. Ice had long since formed in little depressions away from the sun. I had an opportunity the same afternoon of observing the birds under timber line conditions, that is, in a snow storm, with little patches of white scattered over the ground. We had the first fall of the year upon the level, accompanied by a strong wind, so it was almost impossible to pick out the crouching birds, even when I knew within a few feet of where they alighted. They were probably in their most striking dress during October, with the contrast of brown and white, and were very conspicuous against their gray surroundings. The lack of predatory animals was very noticeable, for with the exception of two Eagles, none was noted, and no signs of predatory animals were seen on the outer Beardslee Island, although those nearer shore must have some carnivorous mammals. We saw a fox in June and August on the mainland shore, and wolves are abundant. It is rather apparent then that the birds are free from molestation, in direct contrast to their life upon the mountain slopes of the mainland. Ravaged by fur-bearers, it is possible the Ptarmigan first used the islands for protection, and having found both food and comparative safety, have continued to live under such conditions. On the other hand, the islands might be considered as being alpine in nature, with timber line conditions, as the spruce are small and willow and

alder predominate, with the characteristic profusion of small growths. The soil is scant, the glacial sands and moraine debris being exposed, while the windward shores of the outer Beardslee are precipitous; the glacial winds sweep down channel, ice bergs line the shores, and taking all into consideration, the region is probably the coldest of southeastern Alaska.

Willow Ptarmigan are pretty well distributed among the islands, but owing to the inaccessible regions they inhabit, are rarely taken except in winter, when they drop into the woods from their summer home on the mountain tops. They are found on Baranof and Chichagof, especially in the vicinity of Peril Strait, from information I have had from local hunters, who distinguish between the Rock and Willow Ptarmigan as Little and Big Ptarmigan, respectively. Willett tells me he has taken the Willow Ptarmigan on San Juan, Suemez, Kupreanof and Prince of Wales Islands. I have worked the mainland in many places, but have been unable to locate other than Dixon's and White-tailed Ptarmigan.

Lagopus rupestris dixoni. DIXON'S PTARMIGAN.—It was not until fall that I made my first trip to the mountain-tops and I then covered the hills of the mainland shore near Juneau, which average about 4000 feet in height; I ascended Mt. Robert, Mt. Juneau, Granite Creek Mountains, and the Salmon and Lemon Creek Mountains. During October there appeared a wealth of small birds, and many Ptarmigan were seen and collected. The vegetation was in the height of its "autumn glory," and a peculiar "lily-pad" which flourishes abundantly, colored the hills an intense yellow, above timber line, while still higher, among the piled boulders, there was a small ever-green growth upon which the Ptarmigan were feeding. A few were found in such a site, and some of them were extremely wild. To quote from my notes: "September 12.—The Ptarmigan in Granite Creek were taken among the boulders and slide rock on the summit of the highest mountains surrounding the valley, at an altitude of over 4000 feet. There was absolutely no vegetation. That they are well named 'Rock Ptarmigan' there can be no doubt after noting their habit of sunning themselves upon the tops of large boulders; one rested upon a little overhanging ledge which left a sheer drop to the valley floor far below. Several small flocks were seen flying about like so many Doves. They raised from the mountain on which we were hunting and sailed across the valley to the foot of a hanging glacier. One band flew over me and I tried to drop a bird on our narrow ridge, but the tumbling Ptarmigan sailed on into space, and dropped at least 1500 feet to the valley floor.

September 14. Returned to Granite Creek and saw but five birds. Collected a pair among the boulders on the very summit of the mountain.

September 23. Climbed Mt. Robert and flushed 12 birds. They were very wild and could hardly get near them although I succeeded in getting three. They are rapidly assuming their winter's dress of white, being at the most beautiful stage, with their mixtures of browns and white.

November 11. (Head of Lemon Creek Valley—five miles from beach). When just above timber line I saw a Three-toed Woodpecker on a dwarfed hemlock, and on the snow-fields above, about thirty Ptarmigan. The tops were icy, making creepers a necessity. The birds were in full winter plumage, wonderfully handsome fellows, the white of the males being relieved by the black eye patch. Their call notes could be heard from all sides of the snow covered mountains, and here and there cream-colored birds, gleaming in the sun-light could be seen. Overhead an Eagle circled, and soon the air was filled with flying Ptarmigan, although I did not see the Eagle make a swoop toward them. Of all the birds seen, only five were in one band, while the others were scattered in singles or pairs, and I wondered if they spread to feed among the little patches of grass sticking through the snow, or for the protection which isolation some times brings. The call note of the males was constantly heard. This note has an individuality about it which can be mistaken for no other bird. The Ptarmigan were tame, and often allowed us within good photographing distance, especially if we tried to imitate their note. They rise from the ground with great speed, and usually their flight is direct, although when flying out over a valley, they often slant down as though to attain greater speed. A few specimens were taken, and we found it difficult to secure our birds, for immediately they were hit, they started sliding down the slippery mountain side, and did not stop until they reached the brush line far below. This particular habitat was picturesque, to say the least, and on this day remarkably beautiful, for the cloudless sky was a deep blue, the horizon was the serrated white line of the mountain tops, and the winding glacier—from its colorless snow fields at the summit, to the seamed and rugged ice-field below, with its characteristic shadows and high-lights of blue and white, made a wonderful panorama."

After the winter snows have covered the mountains to a considerable depth, these birds drop to the valley floors where they feed among the alders and willows. They were often encountered during the following winter days, sometimes in large flocks, and many specimens were secured. The species may be considered a rather common bird in its proper habitat, near Juneau; it is simply a matter of looking in the proper place—and often involves some rather strenuous work.

Lagopus leucurus leucurus. WHITE-TAILED PTARMIGAN.—A few of this species were taken from among the flocks of Dixon's Ptarmigan wintering in the valley of Granite Creek Basin—one on January 25, 1921, another February 14, and four two days later. I had looked carefully for the species during the fall and early winter months, and I am satisfied their range is not near the coast, at least near Juneau, but rather in the interior, and that they only come out during the later winter months. It was of interest to note that the crops of this species contained only buds of the alder, while the Dixon's Ptarmigan taken at the same time had been eating only the fruit of the alder. The specimens of the White-tailed Ptarmigan taken were, of course, in white plumage.

Circus hudsonius. MARSH HAWK.—I have seen this form but once, but I have been told it is a common bird near Mendenhall River during the fall. A male was taken up the Taku River during the fall of 1919 by a trapper. He had roughed the skin out. On September 14, when on the summit of the Granite Creek Mts., at an elevation of over 4000 feet, one flew over me, apparently crossing the mountain range to the Taku River. I shot the bird, but it fell in such a precipitous place that I could not secure it.

Accipiter velox. SHARP-SHINNED HAWK.—Fairly abundant throughout the summer and fall. In Hooniah Sound, near the head of Patterson's Bay, I saw two, one on May 14, the other two days later. A male was collected on the Mendenhall River, June 5. I was out in a drizzling rain, following along the stream when a Forbush's Sparrow swirled along and darted into the grass at my feet, and as I instinctively looked around to see the cause of the bird's alarm, I noted this little Hawk just swerving away. Two were seen along Gastineau Channel near Juneau, September 1, and one was collected. During September, these birds were noted above timber line where they were hunting small birds. Four were on Mt. Robert, September 9, two on the Granite Creek Mts. the next day, one up McGinnis Creek, September 17, and another the same place October 17; two more were noted on Mt. Robert September 23, and a very small male was collected. The birds examined proved to be living entirely on other birds. That they are adepts at gaining a living there can be no doubt, and they have no equal when it comes to darting in and out among the dense vegetation, or swirling over the mountain tops with the speed of the wind. Many small Hawks were seen from time to time during the fall which were impossible to identify, as the several small species inhabiting the same locality are very similar in appearance. Perching birds were common on the mountain tops during the fall migration, and the cover was scarce, so it is natural that the small Hawks would be common at that high altitude. (I saw three birds during my field work which I took to be Cooper's Hawks, one in Hooniah Sound, May 10, and two on Mt. Robert, September 9. There were more Hawks in the air on this date, than were seen at any other time. There is too much chance for error in making sight identifications of Cooper's Hawk, so I am not positive of my records.)

Astur atricapillus striatulus. WESTERN GOSHAWK.—Not common. I saw one at the head of Patterson's Bay in Hooniah Sound, May 10, and killed one at Mud Bay, Chichagof Island, August 8, but was so unfortunate as to hit it in the head with my .30 rifle. One was seen above timber line near Twin Points, Admiralty Island, August 30, and two more the following day. A young bird was taken on the Mendenhall River, September 7, and another noted on McGinnis Creek, September 17. Mr. Rudy, who has a ranch on the Mendenhall River, told me this species causes him considerable trouble by killing his poultry, and said there was scarcely a day in the fall when one or more were not seen.

Buteo borealis alascensis. ALASKA RED-TAIL.—According to my experience, this is a rare form, I have never been able to collect a specimen and my sight records are few and far between. One was seen in Big John Bay, Keku Strait, November 19, 1919, two in Oliver Inlet flying with a pair of Eagles, February 5, one on Kupreanof March 5, and two at Craig March 12. Willett told me this species is not uncommon among the southern islands, in the vicinity of Craig and Sitka. Two were seen at Mud Bay, Chichagof Island, June 20, and one in Granite Creek, near Juneau, September 14.

Archibuteo lagopus sancti-johannis. ROUGH-LEGGED HAWK.—This species was taken only in Glacier Bay, where five were noted and four collected. A male was taken on Willoughby Island, June 12, a female at Sandy Cove, August 11, and another seen, and a pair collected on the outer Beardslee Island, August 14. All were in the dark phase except the one collected at Sandy Cove (No. 592), which was a light-colored bird (stomach contents of 592 consisted of eight Microtus). In connection with this specimen it is of interest to quote from the report of the 1907 Alexander Expedition, in which Dr. Grinnell states, "The probability seems to be that this "dark phase" is really a geographic form occurring in regions of excessive humidity, and not identical with the "light phase," American examples of which are said to not differ from the European form." I found a pair of breeding birds in Golovin Bay, on Bering Sea during the summer of 1921, one of which was in the "light phase," and the other in the "dark." (Condor 1926, No. 3.) p. 123.

Aquila chrysaetos. GOLDEN EAGLE.—I have only one definite record for the occurrence of this species in southeastern Alaska, and that, a female, was collected on Mt. Robert, near Juneau, September 23. I was above timber line, nearly at the summit of the mountain, when a very dark Eagle sailed under me along the edge of a precipice. I dropped the bird, which fell nearly a thousand feet. I understand this species is fairly common in the interior. This bird had been feeding upon a marmot, leg bones and fur being found in the stomach.

Haliaeetus leucocephalus alascanus. NORTHERN BALD EAGLE.—This is the most abundant of the birds of prey along the coast, and my notes show they were recorded from every locality visited; they are to be found especially abundant about points where herring are schooling, or about salmon spawning beds. The natives call them fish-eagles, properly, for their diet consist almost wholly of this food. There has been much said about their destructiveness to large game, and while it can not be denied they do occasionally kill a fawn, I think on a whole, they cause but little damage in southeastern Alaska. I saw a "flock" containing at least 300 March 10 at Klawack, where herring were schooling. Twenty-one birds were counted in one tree! It must be remembered, however, that this was prior to the breeding season, and all the Eagles for miles around were probably congregated due to the easily accessible

supply of food. At Hooniah Sound, during May, Eagles were common, at least fifty birds being within a radius of five miles of our camp. This is a large territory of course, and the fact that they are such big birds makes them conspicuous for a long distance, especially when they are silhouetted against the sky. They were just beginning to nest, and we found nine nests in our two weeks stay. One examined May 11 had one egg in it. I remember this nest particularly because a pair of crows had made their home under that of the Eagles. The nests are usually bulky affairs, placed in inaccessible trees, although they are occasionally placed where one can inspect them without risk. On Forrester Island, July 9, I examined a nest shown me by Willett. The nestlings were full grown at the time, although the wing feathers were not fully developed. Willett had examined the nest May 22, and the young then were but three or four days old. Eagles catch a good many Ptarmigan during the winter, according to the hunters. I saw the Ptarmigan flying wildly about November 11, when an Eagle flew over. I doubt if they catch many in the summer, however. The truth is, our noble bird is a scavenger, and he is usually seen out on a bar at low tide, picking up refuse. On one occasion I crippled a Duck at the mouth of the Stikine, and a few minutes later saw a grand old bald-headed fellow swoop down in the drifting ice, far off shore and catch my bird. He flew by me just out of gun range, but I fired, and at the report, he swerved, and dropped my duck upon the sand.

Falco peregrinus anatum. DUCK HAWK.—Three were noted at Sand Point, Glacier Bay, on August 11, two of which were collected. I had just rounded the point, following close to a dense screen of alders, when I flushed a flock of Ptarmigan which were feeding among the strawberries. They had hardly settled into the thicket than the three hawks were hovering low, as though trying to locate them. The Hawks were very tame, and continually circled overhead; I returned to the point later in the day with a shotgun and found the three birds sitting upon a log thrown upon the beach by the tide, and collected two. Their stomachs were empty.

Falco peregrinus peali. PEALE'S FALCON.—This, according to Willett, is the bird which breeds on Forrester Island, half a dozen pairs nesting along the cliffs. One or two pairs are to be seen daily. It is peculiar that such capable birds should nest in such accessible places, for they usually build their home on some little point within easy climbing distance. Willett has seen eggs which were half incubated May 2, and found downy young by May 22. These Hawks are the most predaceous of Forrester birds, doing far more damage among the other residents than does the Eagle, for they are more agile, swift of flight, and courageous. It is a wonderful sight to see one of these old robbers dart from a limb and take up the pursuit of a swift flying Puffin—darting along on silent wing. The number of feathers strewn about the Puffin and Auklet colonies

bears testimony to the fact they take a large toll from the underground tenants.

Falco columbarius columbarius. PIGEON HAWK.—These fast flying little Hawks are fairly plentiful during the fall migration, when both young and adults are to be noted. They were most numerous during September, high above timber line, where they were sailing over the mountain tops, or swooping low over rugged crests as they hunted for food. They are extremely capable, and do not seem to have much trouble gaining a living. Both specimens collected had been feeding on some passerine bird. I saw a Hawk each evening of April 19 and 21, at the mouth of the Stikine River. It is possible I saw the same bird each time, however. In each case, it was flying low, and extremely fast, one time in pursuit of a small band of Longspurs. I was unable to see the outcome of the race. One was seen in Hooniah Sound, May 17, and another at Muir Glacier, August 12. This bird was chasing an Arctic Tern. I collected a male at Twin Points, Admiralty Island, September 1, and several were seen on Mt. Robert, September 9, one at Granite Creek the next day, and two more September 14; two were noted at Salmon Creek and one taken September 11, and two others were noted high among the mountains of Admiralty Island, along Seymour Canal, September 30.

Falco sparverius sparverius. SPARROW HAWK.—I saw but one below timber line, and that at Craig, March 11. A female was seen within the city limits as it flew across a bit of cleared land. A male bird was noted above timber line on Mt. Robert, September 9, a pair was collected at Salmon Creek, September 11, and five were observed at Granite Creek, September 14, four of which were in one flock. There were small Hawks noted from time to time which might have been this species, or Sharp-shinned or Pigeon Hawks, but were too far away to positively identify. Both specimens taken were found to have the remains of Microtus in their stomachs.

Pandion haliaetus carolinensis. OSPREY.—One was seen at Zarembo Island, near Wrangell, early in the morning, July 24. This species was evidently more common a few years ago, for I heard a fisherman, who happened to be a good observer, ask why Fish-hawks were so scarce, when they used to be numerous around Wrangell and Killisnoo.

Field Museum Nat. Hist., Chicago, Ill.

(*To be concluded*)

ATTENTIVENESS AND INATTENTIVENESS IN THE NESTING BEHAVIOR OF THE HOUSE WREN.[1]

(*Plates X–XIII*)

BY S. PRENTISS BALDWIN AND S. CHARLES KENDEIGH.

DURING the last two summers at the Baldwin Bird Research Laboratory, Gates Mills, near Cleveland, Ohio, work has been carried on rather intensively to discover the relation between the time that the adult House Wrens (*Troglodytes aedon aedon*) spend at their nesting activities and the time that they spend in seeking food and rest for themselves. This relation is a very important one for the birds, for in the first instance, they are concerned with the duty of reproducing their kind, and in the second, with maintaining their own life processes.

Two methods were used in making this study. The first of these methods was that of observation. Usually several hours a day were spent in recording the movements of particular birds under very favorable circumstances. While the birds were inside the box, their activities were watched through observational tubes. These tubes were arranged with but little trouble and caused the normal actions of the birds to be disturbed not at all. In making these, the back of the wooden bird-box was taken out, and a transparent glass plate was put in its place. The box was then tacked up on the side of a building over a hole cut through the wall. This hole was of the same diameter as the inside of the box. Thus a person inside the building could look through the hole and the glass and observe everything that the bird did within. But to do away with all possible source of fright to the birds, a section of an old stove pipe was tacked against the opening in the wall, inside the building, and a piece of cardboard with a small peep-hole punctured in the middle was placed in the end of the pipe. This made the back of the box appear black from inside the nest box, yet allowed one to take detailed observations from inside the building. Several boxes were arranged in this way. The activities of the birds while away from the box were more difficult to follow. This could be done only with the use of binoculars.

[1] Contribution No. 10 from the Baldwin Bird Research Laboratory.

Although observation is probably the most accurate and unquestionable way to study bird activities, its limitations are such that its value as a method is greatly impaired. The second method that we used overcame many of these limitations, yet did not sacrifice anything materially in the way of accuracy. This method was based upon the use of thermoelectricity in registering the visits of the adult bird to the nest and much of her activity there. The main purpose of this paper is to describe this method.

According to Kimball,[1] knowledge of the principle of thermoelectricity dates back to 1821, when Seebeck, of Berlin, discovered

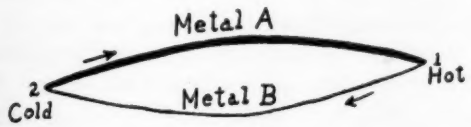


Fig. 1.

that "in a circuit made of two different metals if one junction is hotter than the other there is an electromotive force which causes an electric current." Thus if two different metals, designated A and B above (fig. 1), be joined together at points 1 and 2, and point 1 heated to a temperature higher than point 2, a current will flow around the circuit. The direction of the current depends on the character of the metals used. If the thermo-electric circuit be broken at any point, as at point 3 in the diagram (fig. 2), the current, of course, will cease flowing, and a difference of potential or electromotive force will appear.

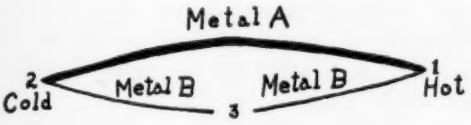


Fig. 2.

The magnitude of this electromotive force depends on the temperature difference between points 1 and 2 and furnishes a means of measuring this temperature difference. If one of the junctions, for example, the cold junction at point 2 be maintained at a con-

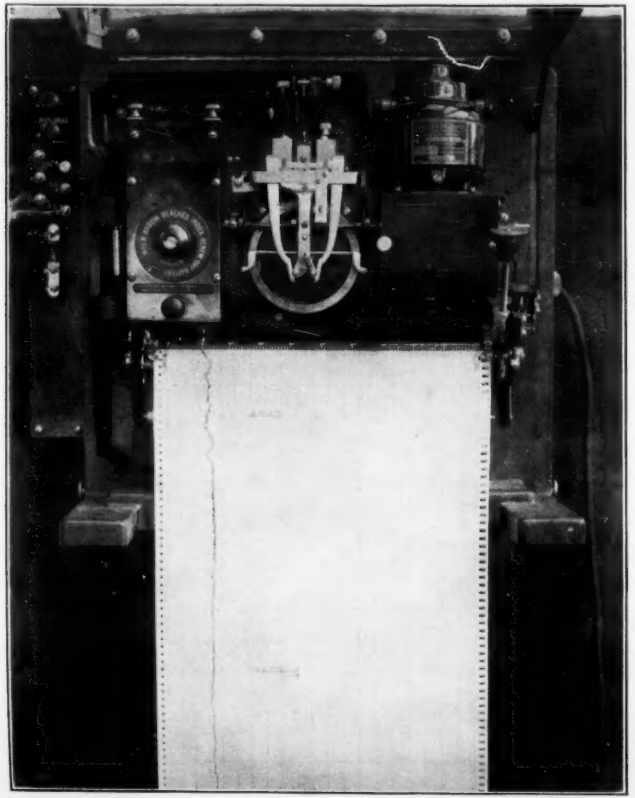
[1] College Physics, 1917, p. 442.

stant temperature, the temperature at point 1 is determined when the electromotive force is known.

Owing to the small magnitude of the electromotive forces involved (generally less than .002 volt in the work to be described) only the most delicate and sensitive instruments can be employed for their measurement. When, as in the present case, a record of temperature variations is to be made, the instrument must be designed not only for great sensitiveness, but also for strength enough to make the record. The Leeds and Northrup Company have developed such a recorder (Pl. X, fig. 1). Their instrument is operated in conjunction with a thermocouple composed of the two metals copper and constantan, the latter an alloy of nickel and copper. The two thermocouple wires are run directly to the recorder which is therefore at the same temperature as the cold junction. An electrically compensating device embodied in the instrument, automatically corrects for external temperature variations at the recorder and gives as true an indication of temperature at the warm junction, as if the cold junction were maintained constant at zero.

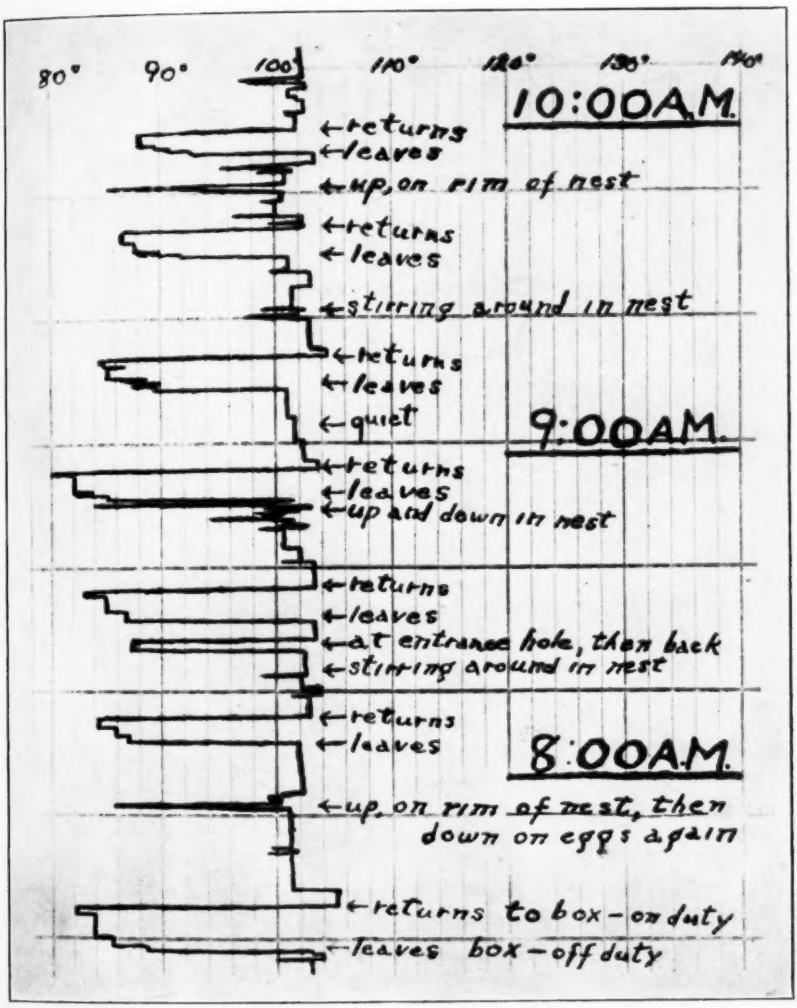
The recorder operates on the potentiometer system by which a small sensitive galvanometer needle is caused to swing to the right or left whenever the warm junction is at a temperature higher or lower than that indicated on the recorder. At once, through the agency of levers, cams, etc., a small electric motor causes a wheel attached to the recording pen to rotate one way or the other until the temperature indicated by the recorder is again the same as that at the warm junction. At this point the galvanometer needle is again in its neutral position and the recording pen is at rest.

When at rest, the electromotive force of the thermocouple is exactly balanced with a potential produced by two dry cells. This relation is made clear on next page (fig. 3). The potential of the dry cell current is greater at A than at B and grades gradually from the first extreme to the second because of the increasing resistance in the slide wire. Thus by varying the location of point C through the revolving of the wheel mentioned in the paragraph above, any thermocouple potential may be balanced against an equal potential in the dry cell circuit. The two potentials are of opposite polarity, and so oppose each other.



1. TEMPERATURE RECORDER.

2. POSITION OF THERMOCOUPLE IN NEST LIKE A THREAD ACROSS THE EGGS.



SECTION OF TEMPERATURE RECORD WITH INTERPRETATION WITH RESPECT TO MOVEMENTS OF THE BIRD. (FAHRENHEIT SCALE.)

UNIV. OF MICH.

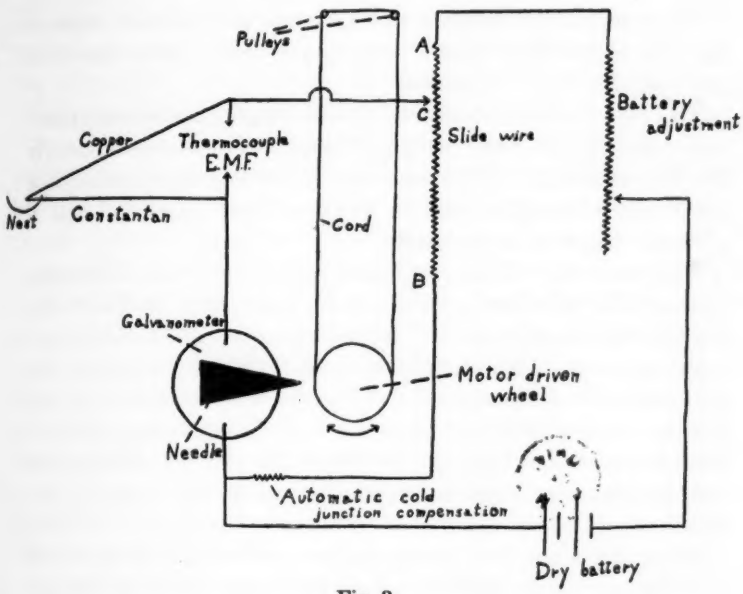


Fig. 3.

Hence, when the two potentials are equal, no current flows around the thermocouple and a uniform temperature record is produced. When the thermocouple potential becomes greater or less than the potential of the dry cell circuit at point C, a current flows around the thermocouple until C is shifted to a point between A and B which will again make the two potentials equal.

The recording pen bears on a paper rolled past at a constant speed by means of the same small motor above mentioned. Thus there is furnished a paper and ink record of temperature variations with time. This paper is marked in degrees of temperature and the instrument can be adjusted to use either the Centigrade or Fahrenheit scale. We have given some thought to this question of which scale should be used for this and other temperature studies in our laboratory, and finally decided to use Fahrenheit, because it is in more general use, is better understood by most people, and its unit of measurement is smaller. A straight line along the paper indicates a constant temperature while a more or less sloping line indicates a more or less rapidly changing temperature.

The operation of the recorder requires a small amount of power from the electric light circuit and also the daily standardization of the current from the dry cells.

The potentiometer system of thermocouple temperature measurements has one point making it especially suitable for use in life history studies. The accuracy of the readings obtained is practically independent of the length of leads employed and of external temperature variations.

This, in brief, is the principle and manner in which the recorder works. The recorder is placed in the laboratory, and wires are run out to any nearby nest. The warm junction end of the thermocouple is placed in the nest (Pl. X, fig. 2). The thermocouple wire at this point is thin and flexible and is run from one side of the box through the nest just above the eggs (if it is eggs that happen to be in the nest) and then out the other side. The junction of the two metals, copper and constantan, comes at the middle of the nest.

When the adult bird enters the box and settles down on the eggs, she, of course, applies heat to them and warms up the nest cavity. The increase in temperature causes an increase of electric potential at the recorder, and this is registered on the paper evolving from the recorder in the laboratory by a variation in the line drawn by the pen. Every time that the bird settles down in the nest there will be one kind of variation in the line, and every time that she leaves the nest there will be another kind of variation—because of the difference in the temperature of the nest. In fact, every time that she stirs around in the nest to any extent, shifts her feet, gets up on the rim of the nest, or goes to the entrance of the box for an instant, all such movements will be registered by characteristic marks in the record (Pl. XI). Since the recorder is in action day and night we have thus a fairly complete record of the activities of the adult bird at the nest. It is possible to get such records of the female from the beginning of the nest-building activities until the end of the brooding period. We have not been successful as yet in using this method for recording the number of times that the adult birds feed the young, since they do not brood everytime they enter the box, but possibly it may be so used.

The possible use of this form of instrument in our problem of

obtaining nest temperatures was first suggested to us by Dr. C. Baldwin Sawyer,[1] and it was largely under his direction and with the coöperation of the Leeds and Northrup Company that the recorder was installed and fitted to our needs.

The advantages of this method are obvious. Perhaps its greatest merit lies in the continuous record, day and night, which it gives us of the bird's activity over the greater part of the nesting period. Observation, alone, could never give us such a record except with preposterous effort. The use of the instrument also gives valuable temperature data. When the bird is sitting, we get a record of the approximate temperature being applied to the eggs, which temperature approaches that of the belly of the bird. When the bird is gone, we get a record of the nest temperature to which the eggs are subjected. This record is accurate to within one degree Fahrenheit, plus or minus. Another instrument based upon the same principle but which is not self recording is giving us nest and egg temperature records accurate to within at least one-tenth of a degree.

One criticism may be offered to this method in that it introduces a foreign object into the nest cavity. It may be thought that this would make the actions of the bird abnormal, but this is not so. Of course, different birds respond to the wire in different ways, but in the nests with which we have experimented, the adult bird after the first day or two paid little or no attention to it. We obtained a check on the amount of uneasiness which the wire might have caused the sitting bird by observations at other nests where there were no wires.

Another possible objection is that the record merely gives us circumstantial evidence, and that our interpretation of the variations in the temperature line must be largely arbitrary. Frequent checking of the record by direct observation of the bird in the box, however, makes us believe that our interpretations are never far from the truth. Several times during the summer, two people

[1] It is our good fortune that Dr. Baldwin Sawyer, who is a nephew of Mr. Baldwin, spends many a week end on Hillcrest Farm, and has given freely of his time and thought in working out the temperature experiments. Dr. Sawyer is an officer of the Brush Laboratories Co., of Cleveland, therefore an expert in electro-chemical and physical problems. We must also add that he has helped us considerably in the preparation of this paper, and the first three text-figures are of his designing.

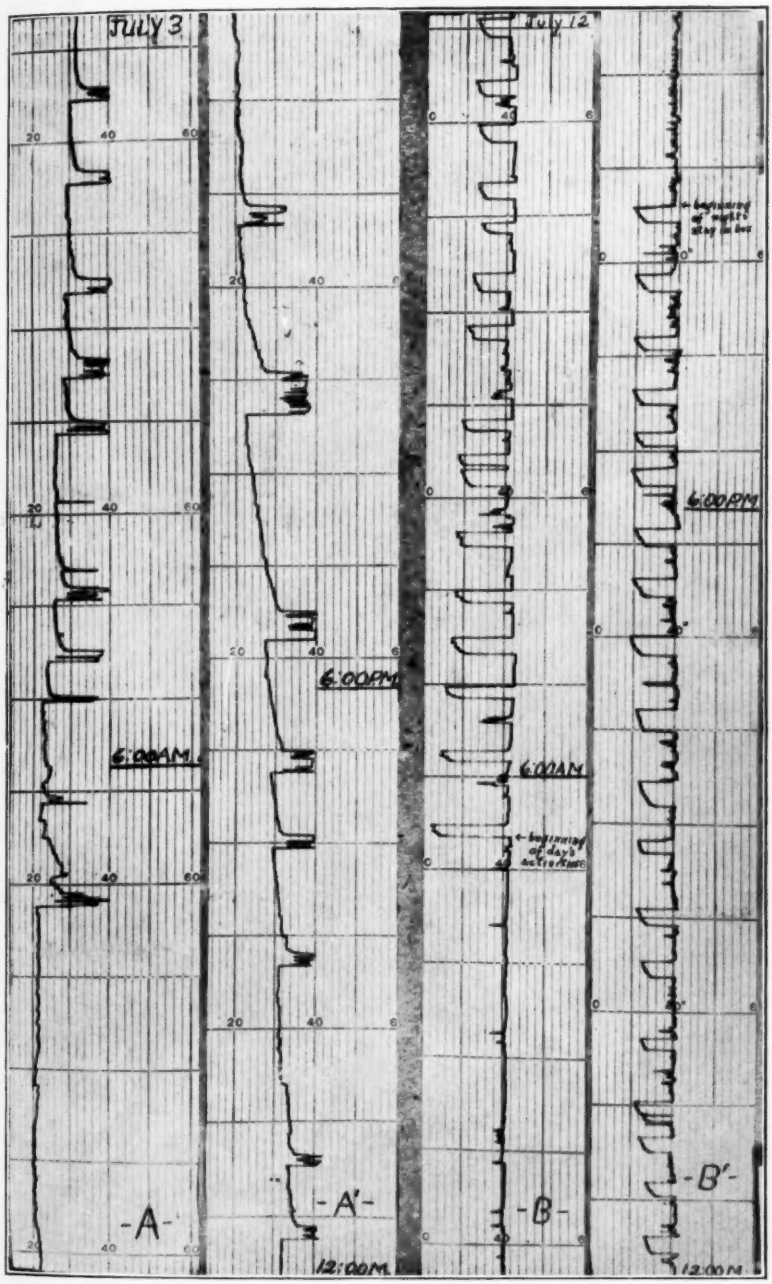
were used to check the record. One remained outside where he could observe nearly all the actions of the bird while the other stood inside the laboratory entirely out of sight of the nest and as that record unfolded called out what the bird was doing perhaps one hundred fifty feet away. The correlation was very satisfactory in its exactness.

The recorder was in continual operation for ninety-one days and nights during this last summer, from May 23 to Aug. 22, 1926. This gave us some two hundred fifty feet of record. The instrument was attached at different times for varying intervals to four different Wrens' nests and to one Robin's. This, together with over seventy hours of observational notes, gave us a vast amount of data and some very interesting probabilities in the way of results. However, in this paper we are confining ourselves to one aspect of the subject, that of the general relation between the attentive and inattentive periods.

The differentiation between the periods of attentiveness when the bird is actually engaged in nesting activities and the periods of inattentiveness when it is feeding or resting is best developed with the female for it is she who is most active in the reproduction of the species. However, the same relation holds for the male as we shall see later.

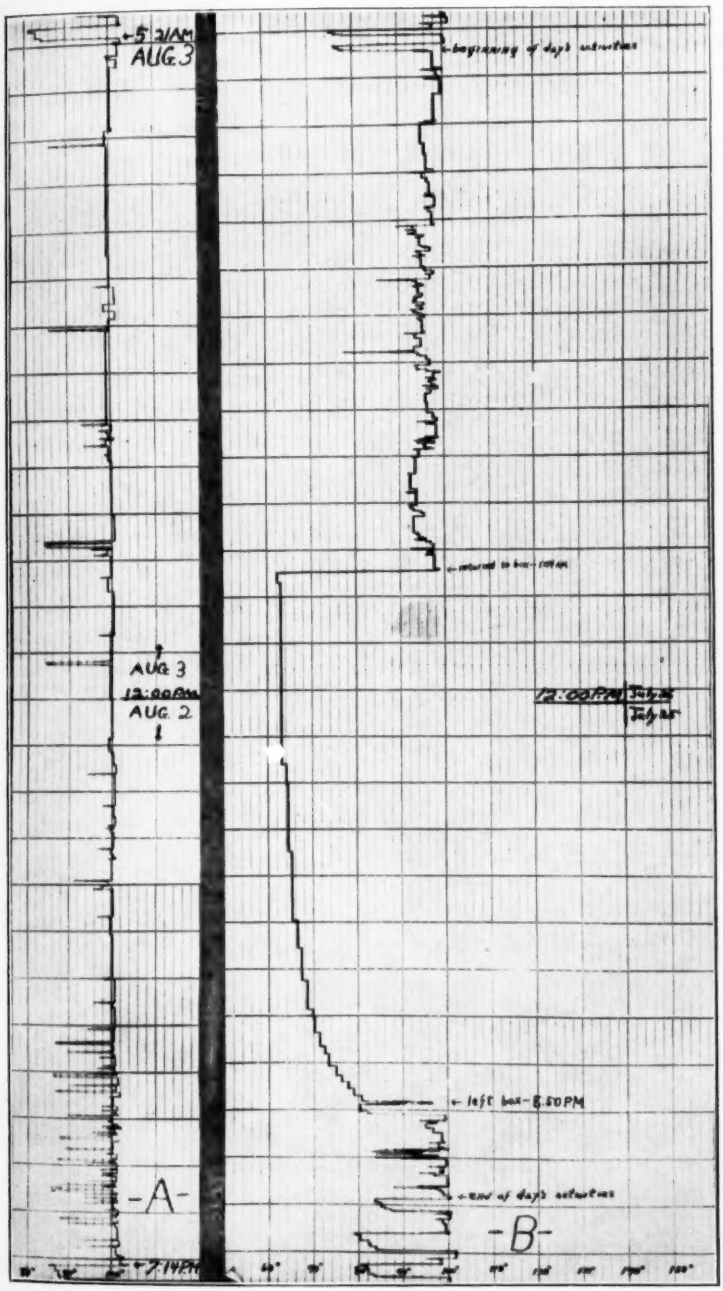
After the female becomes mated with a male, she soon begins to carry in lining for the nest, the rough part of which had been begun or finished by the male some time previous. The female, however, does not carry nesting material into the box continuously for long at a time, getting her food at odd moments when she is looking for material. On the contrary, she works assiduously at building the nest for a period of a few to several minutes, and then goes off and hunts actively for food for herself, only to come back when this period is ended to carry in more material for another stretch of time, and so on. While building her nest she is not concerned with looking for food. Likewise, when she is away looking for food she does not concern herself with nesting duties. She usually spends a good deal longer time away from the box than at the box during this phase of her nesting activities.

The same holds true for the days during which she is laying her set of eggs. Her inattentive periods are usually much longer than



A.A'—TYPICAL DAY RECORD FOR THE PERIOD OF EGG-LAYING. EGG NO. 3 WAS LAID AT FIRST VISIT TO BOX, PROBABLY AT TIME OF HIGH TEMPERATURE MARK.

B.B'—SAME FOR INCUBATION PERIOD. SIXTH DAY AFTER LAST EGG WAS LAID. (CENTIGRADE SCALE.)



A.—TYPICAL NIGHT RECORD FOR INCUBATION PERIOD. NOTE RESTLESSNESS DURING FIRST TWO HOURS OF EVENING, AS CONTRASTED WITH REMAINDER OF NIGHT.

B.—AN UNUSUAL NIGHT RECORD. (FAHRENHEIT SCALE.)

her attentive periods, although she comes to the box at regular intervals throughout the day (Pl. XII, AA′). As her set nears completion and the duties of incubation approach, the inattentive periods gradually shorten, and the attentive periods not only lengthen but become more numerous.

While incubating, the periods of attentiveness for female number 71653 (U. S. Biological Survey band number) averaged fourteen and three-tenths minutes long and the periods of inattentiveness six minutes, that is, she incubated the eggs during the day only for short periods at a time, and between these incubating periods she was away feeding (Pl. XII, BB′). The way these periods alternated with each other was very definite and regular although there was often quite a little variation in the actual length of the periods. The length of the inattentive periods was more uniform than the length of the attentive periods. This bird spent every night in the box during the incubation period (Pl. XIII, A), although once "she went out for the evening" at 8:50 o'clock and did not return until 1:04 the next morning (Pl. XIII, B). During the last three days of incubation, the duration of the periods of attentiveness greatly lengthened, but the length of the periods of inattentiveness remained practically the same. Although the above record is for only the one female, all the females of which we have data showed the same tendencies in their actions.

The day on which the eggs hatched was a very busy one for this female (number 71653). The activities during the early morning started at the normal rate. She left the box after the night's stay at 5:22 o'clock, and for over an hour and a half her trips to and from the box were much as they had been during the incubation period. However, beginning at 7:11 her record indicates considerable uneasiness. The reason for this became apparent when at 7:35 the first young bird was found to have just broken out of the shell. All of her eggs hatched during the rest of the day. The number of her attentive and inattentive periods during the day was eighty-two, although the average number per day during the incubation period had been only forty-three and a half. This unusual restlessness, however, was exceptional, since our records for other females are much steadier.

This female during the next few days gradually resumed her

normal rate of activity. During the next six days when she spent considerable time brooding the young, her periods of attentiveness averaged about thirteen and eight-tenths minutes and her periods of inattentiveness about four and six-tenths.

When both adult birds were busy from morning till night with the feeding of the young, periods of attentiveness and inattentiveness still were the rule. The adults would feed the young several times in succession and then take a short period off when they would get some food and rest for themselves. Sometimes they would feed the young repeatedly and rapidly nine, ten, or more times before they would stop. Then again the number of feedings per period would be only three or four, or in many cases, but one. Usually the number of feedings per period averaged higher in the morning than in the heat of the day.

The following short extract from the observational notes of August 14 illustrates the relation between the two periods during this phase of the nesting activities. The female's record is here separated from the male's, but the behaviour is very similar in both sexes.

9:26 A.M.—Female feeds miller to one young.
9:31—Female feeds fly to one young.
9:32—Female feeds cricket to one young.
9:33—Female feeds one young.
9:34—Female feeds cricket to one young.
9:35—Female feeds insect to one young.
9:36—Female feeds insect larva to one young.
9:40—Female feeds spider to one young.
9:41—Female feeds insect to one young.
9:43—Female feeds larva to one young.
9:43—Female feeds insect to one young.
9:44—Female feeds insect to one young.
9:49—Female feeds insect to one young.
9:56—Female feeds one young.
9:57—Female feeds one young.
9:58—Female feeds insect to one young.
10:00—Female feeds insect to one young.
10:00—Female feeds insect to one young.

The periods of inattentiveness are the longer intervals between the feedings. These are from 9:26 to 9:31; 9:36 to 9:40; 9:44 to 9:49; and 9:49 to 9:56. The periods of attentiveness are repre-

sented by the series of feedings between these periods away. The length of time actually spent in the box delivering the food to the young was usually only twenty to thirty seconds in each case. Occasionally, the adult birds may swallow an odd bit of food during the period in which they are primarily engaged in feeding the young, but such an odd bit appears to be largely incidental and may possibly be a piece unsuitable for the young.

After the young birds leave the nest, the adults remain with them for some twelve or thirteen days more. For the first part of this period the adults feed the young practically everything that they get. The attentive and inattentive periods are as well differentiated as during the time the young were in the nest. However, during the last few days when the young become largely able to hunt food and take care of themselves, the inattentive periods gradually lengthen and the attentive periods shorten, so that the birds spend a longer and longer time away from the young and a shorter and shorter time with them. Finally, when the young are well able to look after themselves, the adult bird's duty to them largely ceases. What further relation they may have together is probably more that of individual with individual than parent with offspring.

During his courtship, the male's main duty is to sing, although he almost always begins the construction of the nest during this period also. His singing is not continuous, however. He sings only for periods at a time, and between these periods he does his feeding. He thus manifests the same relation between feeding and reproductive activities that the female does.

The following extract from the observational notes of May 8 1926, illustrates this relation for male number 57759.

8:52—Male Wren approaches vicinity of box, sings, carries several sticks into box.
9:05—Leaves, sings occasionally in distance at first but soon becomes entirely silent.
9:24—Returns, sings, then becomes silent and carries sticks into box. He usually gives short churring notes after depositing a stick, but he does not sing while actually working.
9:34—Begins to sing a little again, leaves, becomes silent.
9:45—Returns to vicinity of box, sings courtship song repeatedly.
9:56—Leaves, becomes silent.

The periods of attentiveness here are approximately from 8:52 to 9:05, 9:24 to 9:34; 9:45 to 9:56, and the periods of inattentiveness are from 9:05 to 9:24 and 9:34 to 9:45.

This relation is maintained after he has captured a female, and she is busily engaged at her incubation duties. His activities now are apparently not very important since about all that he does is to sing rather mechanically while being attentive. Occasionally he seeks to wile away his periods of attentiveness by carrying sticks into some nearby box and by beginning the construction of a new nest there. While doing so he sings his courtship song, and thus he often acquires a second mate while his first is still busy with her incubation duties. If his periods of attentiveness were filled with nesting activities, such as helping the female to incubate the eggs, he probably would never have time to engage in polygamous relationships with other females.

Thus we see that with the House Wrens of both sexes, there is a rather definite relation between the time they spend feeding and the time they spend in actual nesting operations, and that this relation takes the form of short alternating periods when they are primarily engaged in either the one or the other activity.

Life-history literature has frequently pointed out this relation for the female during the incubation and brooding periods and also for the male when he shared in these duties, but that such a relation held for both sexes during all phases of their nesting life has not been so generally recognized.

How this relation holds for other species of birds than the House Wren, we are not prepared to say. A certain amount of work with other species carried on during this last summer seems to indicate that the relation may possibly be much the same for all Passerine birds with only a difference in the length of the periods. With species below the Passeriformes this relation may or may not be considerably modified.

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SOME RECENT CANADIAN RECORDS.[1]

BY P. A. TAVERNER.

IN view of the fact that a number of Canadian bird occurrences have not been formally recorded, it seems well to collect them for presentation to the ornithological public. With these occurrences are a few others which have been published in media that may not be generally available for reference and which it seems advisable to include even at the expense of some repetition.

The list here presented contains all unrecorded occurrences of interest, with which I am acquainted up to February 1926, the date of its compilation.

Larus hyperboreus. GLAUCOUS GULL.—June, 1925, I examined a specimen of this species mounted in the collection in the Provincial Parliament Building, Edmonton, Alberta. I was informed on the authority of Mr. Benjamin Lawton, Chief Game Guardian of the Province who is in charge of the collection that it was taken "about 12 years ago" at Gull Lake about eight miles west of Lacombe, Alberta. It is a gull of large size, pure white all over except for many small light brownish flecks evenly and generally distributed. It is therefore a juvenile and seems to be the first record for the species in the Province.

Larus atricilla. LAUGHING GULL.—August 27–28, 1924, three specimens of this species were taken for this Museum by Chas. H. Young at Clam Point, Cape Sable, Nova Scotia. They are females, two of them adult with the black hood of summer changing to the white of winter. The other is juvenile in full winter plumage. These birds with some other straying waifs, hereinafter noted, were taken after and probably as a result of an exceptional storm. The most definite previous record for this species on the Canadian east coast is cited by C. W. Townsend (Canadian Field-Naturalist, XXXVII, 1923, pp. 8–9), as having occurred at Yarmouth, Nova Scotia about 1858. The only other Canadian record I know of is for Toronto, Ontario, 1898 and 1890, Fleming (Auk, XXIII, 1906, p. 442).

Larus franklini. FRANKLIN'S GULL.—I have lately had the satisfaction of examining a specimen of this species taken by Allan L. Moses at Grand Menan, North Head, New Brunswick, December 6, 1925. The bird was mounted by him and sent to me for corroboration of his

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identification. It is a small female but appears to be in full adult winter plumage and shows the characteristic black tipped white based primary pattern separating it from either Bonaparte's or Laughing Gulls in unmistakable manner. According to my records it is the first occurrence of the species on the Canadian east coast. There are records for Toronto, Ontario, Fleming (Auk, XXIII, 442) and Hamilton, Ontario, McIlwraith (Bds. of Ontario). A record for Ottawa, Ontario has been withdrawn by Lloyd (Can. Fld. Nat., XXXVII, p. 103).

Sterna fuscata. SOOTY TERN.—The same storm that was responsible for the before mentioned Laughing Gull sent a specimen of this species several miles inland from the Bay of Fundy, near Wolfville, Kings Co., Nova Scotia, August 28, 1924. It was presented to the Nova Scotia Provincial Museum at Halifax and recorded by R. W. Tufts (Can. Fld. Nat., XXXIX, 1925, p. 64). This forms the first record for the species in Canada.

Chlidonias nigra. BLACK TERN.—Another record made through the instrumentality of the late August storm of 1924 was that of a Black Tern taken by Chas. H. Young, August 27, at Clam Point, Cape Sable, Nova Scotia. It is an adult with winter plumage nearly complete. Mr. Young reported it to be very thin, weak and hardly able to fly. This appears to be the first record for the species on the Nova Scotian mainland though one has been recorded by Jonathan Dwight from Sable Island, 1902. A skull and set of primaries of a moth destroyed skin taken on Sable Island, October 7, 1899, were transferred to this Museum by the Canadian Department of Marine and Fisheries.

Rynchops nigra. BLACK SKIMMER.—The storm previously mentioned was also responsible for the appearance of this species in some numbers on our southeast coast. Mr. C. H. Young who collected four, August 27, 1924, at Clam Point, Cape Sable, Nova Scotia reported them thin and emaciated. A number of others were found about this time, and after, in various stages of decomposition in the same general neighborhood and the species was also noted at Grand Menan, New Brunswick, across the Bay of Fundy. The only previous record appears to be that of Boardman, in 'The Naturalist of the St. Croix,' for the Bay of Fundy, 1879.

Thalassarche chlororhynchos. PINK-FOOTED ALBATROSS.—In 'The Auk,' V, 1888, p. 108–109 appears the record by Montague Chamberlain of a specimen of *Thalassogeron culminatus* in the museum of Laval University, Quebec, taken on the Gulf of St. Lawrence. On page 318 of the same volume are further details of this specimen by Nap. A. Comeau who gives the entrance of the River Moisie as the locality and August 20, 1885, as the date of capture. The above identification was assumed from the description forwarded to Dr. C. Hart Merriam and is evidently the basis of the phrase "accidental in the Gulf of St. Lawrence" in the distribution of the species in the 'Check List' of 1910. Ever since the capture of *T. chlororhynchos* in United States waters near Grand Menan, New Brunswick, there has been some doubt as to the identity of the Laval specimen.

Last fall arrangements were made with the University authorities and the specimen in question was shipped to the American Museum of Natural History where it was examined by Dr. Robt. Cushman Murphy. His report on it is as follows,—

"This bird is a counterpart of the Albatross from Machias Bay, Maine (L. C. Sanford 9835), recorded in 'The Auk,' 1922, p. 58, except that its head is of the normal gray whereas that of the Maine bird is worn nearly white. The measurements agree closely, and it has the same slender, much bowed bill. The coloring of the bill is exactly like that of the Sanford bird. The base of the culminicorn is narrow and symmetrically rounded, with about 6 mm. of black integument on the mid-line between the horn and the feathering. A broad and somewhat indistinct line of blackish feathers extends forward from the eye to the base of the bill, centering at the junction of the culminicorn and the latericorn.

"The concealed parts of the long gray feathers of head and neck are white. In the Maine specimen the feathers of these parts are very worn and short, even the dark loral streak being much reduced. There is every indication that the condition is accounted for by wear.

"The Labrador bird still more closely resembles a specimen which I collected in the South Atlantic (A. M. 132536). A diagnostic feature of the species seems to be the straight line across the base of the culmen where the feathers begin. In *T. culminatus* this line is usually more rounded.

"Measurements of the Labrador specimen; Wing 475; tail 184; exposed culmen 111; tarsus 76; middle toe with claw 110."

It thus appears that the above published identifications of this bird were incorrect and that unless the Oregon occurrence can be well substantiated *T. culminatus* will have to be eliminated from the North American list.

It is only fair to the memory of the late C. E. Dionne, the curator of the Laval Museum, to remark that the label he had attached to the specimen reads, "*Diomedea chlororhyncha* Gm. — Tue en Sept. 1884 au Labrador, plus bas que Moisey."

Moris bassana. GANNET.—About October 15, 1924, a Gannet in juvenile speckled plumage was observed amidst a flock of domestic Geese at Richmond, near Ottawa, Ontario. The Geese attacked the intruder and it made a natural defence. The owner considering his flock in danger killed the Gannet and it is now in this museum. This makes the second record for the species near Ottawa. The previous occurrence was a similarly juvenile bird taken October 14, 1909.

Phalacrocorax urile. RED-FACED CORMORANT.—In going over the Cormorants in the collections of this Museum some little time ago, attention was attracted to a juvenile female taken by W. Spreadborough at Departure Bay, Vancouver Island, British Columbia, April 7, 1910, and hitherto regarded as a White-crested. It is a large sized Cormorant with a few new feathers appearing in old, much worn and faded brown

juvenile plumage. The breast and fore neck are nearly white, much of this is due to fading but even after considerable allowance for this is made it is evident that the bird is a very light-fronted specimen. The gular pouch is invaded on the throat by a tongue of feathering making it heart shaped as in *P. pelagicus* and *P. penicillatus*. The incoming feathers on the back are distinctly grayish with narrow black margins producing the decidedly scaled effect so conspicuous in *P. auritus* and *P. carbo*, slightly shown in *P. penicillatus* and absent in *P. pelagicus*. The bill is similar in size to, but slightly more slender than, that of a small *P. auritus cincinatus*. Culmen 2.25 in. Other measurements are—wing, 11.7 in.; tail, 5.7 in.; tarsus, 2.7 in.; middle toe and claw, 3.0 in.; tail feathers, -12. In spite of the somewhat slender bill the bird would easily pass for a pale-breasted White-crested Cormorant did it not have the heart shaped gular pouch. I have submitted the specimen to two eminent authorities. One concludes that it is some form of *P. carbo* and the other that it is *P. auritus cincinatus* with gular pouch deformed by accident before death or in make-up of skin. The 12-feathered tail seems to rule it out from *carbo* and the closest examination fails to detect any sign of scar or stretching of skin to indicate that the shape is adventitious. By elimination the most probable remaining alternative is the Red-faced Cormorant, *P. urile*. Descriptions of colors of juvenile Cormorants read much alike and are of little guidance here. The forehead of the adult *P. urile* is bare but according to the description and plate in Stejneger's *'Ornith* Exp. in Commander Is. and Kamtschatka' the juvenile has a clothed forehead. In this specimen there has been some oozing of grease about the base of the culmen and it is difficult to see just where the forehead feathering ceases but it evidently extends well down to the base of the bill without any sharp line of demarcation; in fact it is just such a hesitating finish as would be expected in a deciduous character about to be shed. I am quite satisfied that the specimen is a juvenile Red-faced Cormorant, the first record for Canada.

Branta canadensis. CANADA GOOSE.—We have in our collections some very diminutive *Branta* from mid-western localities. One is from Southampton Island, Hudson Bay and supposedly represents a breeding form. The others are migrants from southern Manitoba. Some of these specimens have been cited by recent authors as *B. c. minima*. In spite of their small size, scarcely larger than big Mallards and well within the measurements given for *minima*, it does not seem proper to regard them as such. The small, dark-bellied race breeding on the Bering coast of Alaska and migrating down the Pacific coast to which the name *minima* belongs, can have no direct genetic relation with these small birds of the Interior. They intergrade imperceptibly in every character I can determine with *hutchinsi* and until evidence is produced that they are distinct I think they should be regarded as small, runt individuals of that race. In this connection I may state that in our collections we have no other Arctic coast specimens that we should even consider referring to *B. c. minima*.

Branta leucopsis. BARNACLE GOOSE.—We are in receipt of a specimen of this species taken by a native in the employ of Major L. T. Burwash of the Northwest Territories Branch of the Canadian Department of the Interior, August, 1924, on Boas Lake, near Cape Dorset, Baffin Island; at the west end of Hudson Strait. Another was taken by E. G. White of this city at Cape Tormente, a little below Quebec on the lower St. Lawrence River, October 26, 1925. This specimen is now in his collection where I examined it in the flesh.

Mycteria americana. WOOD IBIS.—E. G. White of this city tells me that "eight or ten years ago" he saw a Wood Ibis brought in in the flesh at St. John, New Brunswick, and that the specimen was preserved—probably in the Provincial collection.

Ixobrychus exilis. LEAST BITTERN.—One taken at Portage la Prairie, Manitoba, October 12, 1923. The specimen is mounted in the Normal School collection, Brandon, Manitoba, and recorded by B. J. Hales in the 'Canadian Field Naturalist,' XXXVIII, 1924, p. 120.

Egretta candidissima. SNOWY EGRET.—Last summer I had the satisfaction of examining a specimen of this species in the Provincial collection in the Parliament Building, Edmonton, Alberta, taken at Sandy Lake in May, 1909. There are other records of white Herons for the Province but at this date we are not able to substantiate their identity or trace the specimens.

Phalaropus fulicarius. RED PHALAROPE.—Inland specimens of this maritime species are notable enough to warrant individual record. An adult male in winter plumage was taken by R. A. Harvie at Disraeli, Wolfe Co., Quebec, September 21, 1917, and deposited in this Museum. I examined another specimen in the collection of C. Garrett, of Cranbrook, British Columbia, taken at Didsbury, Alberta, September 3, 1903—the first record for southern Alberta.

Calidris canutus. KNOT.—Captain Joseph Bernard brought from the Arctic specimens of this bird including parents, eggs and downy young in several stages of development. They were taken on Taylor Island at the southeast end of Victoria Island about latitude 69° 30′ N., longitude 101° W., August 2 to 10, 1919. We have several of the above young and parents in our collections.

Aphriza virgata. SURF BIRD.—In our collections we have a number of specimens taken on the outer islands of Barkley Sound, west coast of Vancouver Island, in January, 1916. They were wintering in considerable numbers with Black Turnstones and Purple Sandpipers.

Cathartes aura. TURKEY VULTURE.—The known breeding range of this species has lately been extended considerably northward. The latest reports include Duck Mountain, Manitoba and Elk Island National Park, about 24 miles east, and 10 north of Edmonton, Alberta—Hoyes Lloyd, 'Canadian Field Naturalist,' XXXVI, 1922, pp. 178–179 and Manitoba near the Ontario boundary line, east of the south lobe of Lake Winnipeg—J. F. Wright, *ibid*, XXXVIII, 1924, p. 76.

Buteo swainsoni. SWAINSON'S HAWK.—Some years ago, we received a female in full dark phase taken during the summer of 1911 a little south of the Porcupine River on the Alaska-Yukon boundary, Latitude 66° 43′ N., by Dr. M. Y. Williams who reported the same in Canadian Field Naturalist, XXXIX, 1925, p. 70. This is the most northern record for the species so far west though we have specimens collected by Dr. R. M. Anderson from east of Bernard Harbor, Dolphin and Union Strait and elsewhere on the Arctic coast.

Falco islandicus. WHITE GYRFALCON.—A specimen, fragments of which are in this Museum, is reported by H. H. Mitchell in 'Canadian Field Naturalist,' XXXVIII, 1924, p. 109, from Indian Head, Saskatchewan, December 25, 1897.

Falco rusticolus gyrfalco. GYRFALCON.—Mr. E. G. White of this city has a specimen in his collection taken at Plum Lake, southwestern Manitoba, October 21, 1918.

Falco rusticolus obsoletus. BLACK GYRFALCON.—We have a report substantiated by a conclusively recognizable photograph of a Black Gyrfalcon taken by Willie La Brie, near Kamouraska, Quebec, in 1922. The specimen is in his collection.

Falco columbarius columbarius. PIGEON HAWK.—Mr. E. G. White of Ottawa, several times has reported a Pigeon Hawk wintering in his garden. This was substantiated March 23, 1924, when under still continued winter conditions Richard Finnie shot one near the city and presented it to the Museum. It is a very old female assuming a suggestion of the blue-black of the male but so generally dark that, save for the lack of restricted primary marking, it would well pass for *Falco columbarius suckleyi* from the west coast. Had this specimen been taken on Vancouver Island it would easily be accepted as an intergrade with the Black Merlin.

Falco columbarius richardsoni. RICHARDSON'S MERLIN.—July 4, 1921, Hoyes Lloyd and the writer had a beautiful view of a male Richardson's Merlin that circled low over our car near Oak Lake, Manitoba. The view was so good that neither of us had the slightest doubt as to the identity. Fortunately, this sight record was later verified by specimens taken by Hamilton M. Laing in the same locality who collected an adult female the following September 17 and a juvenile male October 7. The combination of sight and specimen records suggest that *richardsoni* is a summer residential form either here or in the close-by sand-hill region where the conditions approximate those of the arid sections farther west where it is known to be the breeding form. *F. c. columbarius* was also taken by Mr. Laing, September 2 and October 19, and is probably a migrant form from the more northern woodlands. We know of no other substantiated records of Richardson's Merlin for Manitoba.

Strix occidentalis. SPOTTED OWL.—Occurrences of this species are rare enough almost anywhere to warrant record, especially is this so in Canada where, in southern British Columbia, it reaches the northern limit of its range. We have two Canadian specimens in our collections

One is a mere box of feathers from a desiccated carcass found by T. L. Thacker, June 24, 1916, at Klesilkwa Creek; the other a perfect specimen presented by the same gentleman and taken January 20, 1922, at Mc Naught Creek. Both these streams are minor tributaries of the Skagit River near the International boundary, longitude about 121° 15′ W. At least one other specimen has been taken in this vicinity which seems to be the Canadian metropolis for the species.

Cryptoglaux funerea richardsoni. RICHARDSON'S OWL.—An interesting record of the nesting of this scarce northern species is reported by R. W. Tufts in the 'Canadian Field Naturalist,' XXXIX, 1925, p. 85. The nest in question was discovered April 11, 1924, on the Island of Grand Menan, New Brunswick. It does not seem to be generally known that this species has a dark juvenile plumage similar to the well known one of its near relative the Acadian Owl. Chapman's Handbook seems to be one of the few books that refers to it. There is a perfect example of this plumage in the Provincial collection in the Parliament Building, Edmonton, Alberta.

Otus asio. SCREECH OWL.—In September and October, 1921, Hamilton M. Laing while collecting for this Museum at Oak Lake, Manitoba, secured two specimens of this species. In May, 1925, C. G. Harrold obtained two more and found the remains of a broken up nest with fragments of eggs at Whitewater Lake in the same Province. He tells me that occasional birds are brought in to taxidermists in Winnipeg for mounting. Mr. Norman Criddle of Aweme, Manitoba, says that the first Screech Owl seen by him in the Province was in 1922, and they have nested in his vicinity several times since. This species was not mentioned by Seton Thompson in his Birds of Manitoba, 1891, nor in his Fauna of Manitoba, Handbook for the British Association, 1909. It is apparently a new arrival in the Province. These specimens are all in pure gray phase but notably light as compared with similar birds from southern Ontario. The Laing birds were referred to H. C. Oberholser on the suspicion that they might be *maxwelliae*. He however pronounced them *naevius* (=*asio* of the A. O. U. Check-List). As far as we know these are the first definite specimens of Screech Owl from Manitoba.

Speotyto cunicularia. BURROWING OWL.—July 8, 1921, Hoyes Lloyd and the writer took a non-breeding male ten miles north of Poplar Point, Manitoba, almost within sight of the southern shore of Lake Manitoba. This is probably the most northern record for the species. The first Manitoban Burrowing Owl was taken at Portage la Prairie a few miles south of Poplar Point June 2, 1897, by Geo. Atkinson and recorded by E. T. Seton, (Auk, XXV, 1908, pp. 450–454). At that date the species was evidently extremely rare in the province. Since then it has increased locally in the southwestern portions and Hamilton M. Laing found it not uncommon about Oak Lake during the summer of 1921. Norman Criddle reports the same about Aweme and in country with which Seton was very familiar when he wrote his 1891 list without mentioning this species.

Muscivora forficata. SCISSOR-TAILED FLYCATCHER.—In 1880 Dr. Robert Bell presented us with an extraordinary case of wandering when he obtained a Scissor-tailed Flycatcher at York Factory, Hudson Bay. History repeated itself. We lately received through the Canadian National Parks Branch another specimen of the same species from the same locality. It was found dead but in excellent state of preservation October 2, 1924, by A. Brabant of the Hudson's Bay Company who recognized its value and preserved it. (See Hoyes Lloyd, Canadian Field Naturalist, XXXIX, 1925, p. 86.) On the same page is another record of the same species by R. W. Tufts preserved by John R. Moses, at Grand Menan, New Brunswick, October 26, 1925.

Tyrannus verticalis. ARKANSAS FLYCATCHER.—This species is another recent arrival in Manitoba. E. T. Seton does not mention it in his 1891 list of 'Birds of Manitoba' and gives only adjoining records in his 'Fauna of Manitoba,' 1909. The first record for the province appears to have been a specimen taken at Oak Lake, August 10, 1907, by Hamilton M. Laing who published it at the time in the 'Winnipeg Free Press'. This specimen is now in this Museum. The next report is of a pair occurring at Pilot Mound in 1909 and for three years thereafter (H. H. Speechly, Ottawa Naturalist, XXV, 1911, p. 188 and XXVI, 1913, p. 70). In May, 1912, it was noted near Winnipeg by A. G. Lawrence and at Treesbank by Norman Criddle. It is now rather common throughout southwestern Manitoba. During the summer of 1921, Hoyes Lloyd and the writer found it at Virden, Whitewater Lake, Brandon, Portage la Prairie, Oak Point and between Winnipeg and Selkirk. It was local in distribution, similar to our experience with it in the other prairie provinces, seems to show a preference to the immediate vicinity of railroad stations, and most of the birds seen were in the small tree plantations that decorate those stopping places. The Oak Point locality on the eastern shore of the southern part of Lake Manitoba was probably the extreme northern extension of range of the species in Manitoba. In 1920, the most northern point ascertained to be occupied by the species in Saskatchewan was the South Arm of Last Mountain Lake.

Sayornis sayus. SAY'S FLYCATCHER.—I have seen no definite specimens of this species from Manitoba but Norman Criddle informs me that it has nested several times in late years in the neighborhood of Aweme and is evidently a new arrival in the province.

Empidonax wrighti. WRIGHT'S FLYCATCHER.—The identification of these Empidonaces is difficult and not always conclusively satisfactory. We have four specimens taken by C. G. Harrold at Whitewater Lake, Manitoba, between May 15 and June 5, 1925. In wing measurement these fall between Least and Wright's but, all have the outer primary shorter than the sixth, the acknowledged characteristic of this species are present. This species has not hitherto been ascribed to Manitoba.

Xanthocephalus xanthocephalus. YELLOW-HEADED BLACKBIRD.—We have to report a specimen of Yellow-headed Blackbird taken at

Rupert House at the mouth of the Rupert River on the southeast corner of James Bay in the spring of 1920 by Mr. Costran of the Hudson's Bay Company. The specimen was transmitted to the Museum by Frits Johansen. This, and other similar evidence, suggests that there is an unexpected western influence in the life along the east shores of Hudson Bay.

Euphagus cyanocephalus . BREWER'S BLACKBIRD.—In the 'Canadian Field Naturalist,' (XXXIX, 1925, p. 63), L. L. Snyder reports the receipt by the Royal Ontario Museum, Toronto, of a Brewer's Blackbird taken near Chesterfield Inlet off the west side of Hudson Bay near its mouth.

Rhynchophanes mccowni. MCCOWN'S LONGSPUR.—A male taken May 29, 1925 by C. G. Harrold for this Museum appears to constitute the first fully authenticated record for the species in Manitoba though Norman Criddle informs me that at Aweme it is a not uncommon migrant.

Ammodramus savannarum. GRASSHOPPER SPARROW.—June 29, 1921, Hoyes Lloyd and the writer discovered a populous colony of these birds in the rankly grass-grown flats left by the receding waters of Whitewater Lake, Manitoba. It was just off the "Island," an island no longer and hardly distinguishable from other wooded "bluffs" of the surrounding prairie by its faintly defined old shore line. In spite of the birds being exceedingly wild and protected by covering clouds of venomous mosquitoes, a small series was secured. These have been compared with birds from Ontario, New York and New Jersey. Their breasts are slightly paler than those of these eastern specimens and the bills average a very little heavier. The superior size of wings and tail is too slight for a determinative character. On the basis of the bill size they can be referred to the Western Grasshopper Sparrow, *Ammodramus savannarum bimaculatus.* This is the first record for the Province. Mr. C. G. Harrold took specimens in the same locality, June, 1924, and again in June, 1925, so the colony may be permanent. The same gentleman took the species May 16, 1922 at Lake Johnston, Saskatchewan making the primary record for that Province ('Canadian Field Naturalist,' XXXVII, 1923, p. 118).

Passerherbulus lecontei. LECONTE'S SPARROW.—The taking of a single specimen of this species at MacDiarmid, Lake Nipigon, Ontario, north of Lake Superior, July 27, 1922, by Walter Koelz, (Canadian Field Naturalist, XXXVII, 1923, p. 118) suggests an unexpected eastward extension of this bird's breeding range.

Passerherbulus nelsoni subvirgatus. ACADIAN SHARP-TAILED SPARROW.—I have had the pleasure of examining a perfectly typical specimen of this race from the collection of Willie La Brie, of Kamouraska, Quebec. It was taken in that vicinity. Kamouraska is on the south shore of the lower St. Lawrence River about 80 miles below Quebec city. This seems to be the extreme northern and western extension of range of this maritime subspecies.

Zonotrichia querula. HARRIS' SPARROW.—Gerrit Miller in his

'Mammals of Ontario' noted the occurrence of this species at Lake Nipigon in September, 1896, but the report has been largely overlooked by distributionists. That this was not an accidental migrant is suggested by the taking of the species at MacDiarmid, Lake Nipigon, July 27, 1922, by Walter Koelz and recorded by him (Canadian Field Naturalist, XXXVII, 1923, p. 118). It is interesting to note that the species was not listed on nearby Isle Royale, Lake Superior, where intensive ornithological studies have been carried on through both breeding and migration seasons.

Zonotrichia leucophrys subsp. WHITE-CROWNED SPARROW.—May 21 to June 29, 1921, the writer spent on the shores of Cypress Lake on the southern edge of the Cypress Hills in the extreme southwestern corner of Saskatchewan. This species was common there during this time even after summer quietness had begun to settle down over the general bird population. Short of finding nests, there was every evidence of breeding. The year previous, a very juvenile example of some form of *Z. leucophrys* was taken on Manyberries Creek, Alberta, on the west side of the same hills, so the breeding of the species in the locality can be looked upon as almost certain. Some specimens taken in May at Cypress Lake were *Z. l. gambeli* but thereafter all obtained were satisfactorily typical of *Z. l. leucophrys*. They were one of the commonest birds in every brushy coulee leading north from the lake towards the hills. The breeding of such a northern species as the White-crowned Sparrow in the same locality, without appreciable separation by altitude, with a southern bird such as the Yellow-breasted Chat, as hereafter noted, presents a notable confusion of geographic faunas.

Spizella pallida. CLAY-COLORED SPARROW.—This is another species marking the eastward extension of range of a western species north of Lake Superior, reported by Walter Koelz ('Canadian Field Naturalist,' XXXVII, 1923, p. 118). He found it not uncommon in the vicinity of Port Arthur, Ontario. Like some of the other species reported by him it does not apparently occur on the adjoining Isle Royale.

Pipilo maculatus. SPOTTED TOWHEE.—A male taken by C. G. Harrold at Whitewater Lake, Manitoba, May 4, 1925, for this Museum. It is clearly of this species, though in the amount of white on the sides of the back and on wing coverts, it is not quite typical. This is the first record for the species in Manitoba.

Spiza americana. DICKCISSEL.—June 29, 1921, Hoyes Lloyd and the writer found quite a colony of these birds on the "Island" Whitewater Lake, Manitoba, previously mentioned under Grasshopper Sparrow. The next day others were observed near Boissevain. Norman Criddle ('Canadian Field Naturalist,' XXXV, 1921, p. 135) records them at Melita, a little to the west of these localities, the same season. Hamilton M. Laing informs me that he observed the species at Oak Lake, about 1907 and produced an easily recognizable photograph taken at the time of the bird in life. The only other record for the species in Manitoba

was made by Geo. Atkinson at Portage la Prairie, June 14, 1897. H. H. Mitchell records a single specimen taken at Lake Johnston, Saskatchewan, June 20, 1923, ('Canadian Field Naturalist,' XXXVIII, p. 115). N. A. Wood records the species from the northern parts of North Dakota adjoining these sections.

Cardinalis cardinalis. CARDINAL.—The Museum is in receipt of a male Cardinal taken at Goulais Bay, near Sault Ste. Marie, Ontario, November 7, 1923, and recorded by W. H. A. Preece, ('Canadian Field Naturalist,' XXXVII, 1923, p. 169). Another interesting occurrence of the species is Ottawa, Ontario, seen November 28 and 29, 1924, by Miss L. R. Kingston and several officers of the Biological staff of this Museum ('Canadian Field Naturalist,' XXXVIII, 1924, p. 28).

Icteria virens. YELLOW-BREASTED CHAT.—The morning of June 4, 1921, the writer was awakened on the shores of Cypress Lake, southwestern Saskatchewan, by the characteristic calls of this bird in the brush of the dry creek in whose shelter we were camping. It was only when the bird was taken that he could believe the evidence of his ears. At least one other bird was present and was seen or heard several times up to our leaving June 11. L. B. Potter of Eastend, about 25 miles east of Cypress Lake, informs us that the species occurred there in June, 1922, when he saw two in good view at close range. The ones we saw therefore are probably more than accidental stragglers. In comparing this specimen with those in the Academy of Sciences of Philadelphia I could find in it no distinctly recognizable characters of the Long-tailed Chat, *Icteria virens longicauda*. The wing is just as long as the tail, the yellow is indistinguishable from that of eastern birds, nor is the white of the malar region any more extensive. The back is slightly grayish, but not more so than in many eastern specimens and the bill, if anything, is rather slighter and smaller than in average *I. v. virens*. There appears to be no good reason for separating this specimen from the Eastern Yellow-breasted Chat.

Sitta carolinensis aculeata. SLENDER-BILLED NUTHATCH.—Among the birds collected for this Museum by Hamilton M. Laing at Comox, British Columbia is a juvenile female taken September 9, 1922. This appears to be the first record for the species on Vancouver Island. It does not appear to be much more common on the adjoining main land.

Psaltriparus minimus. LEAST BUSH-TIT.—One of the most interesting of our late records is that of the breeding of this species near Vancouver, British Columbia, K. Racey (Canadian Field Naturalist, XXXVIII, 1924, pp. 94–95). A nest was found some ten years earlier but Mr. Racey reports three others in 1922 and 1923. We have seen some very beautiful photographs of these interesting nests. The occurrence of about 40 birds wintering in 1922–23 is also recorded.

Myadestes townsendi. TOWNSEND'S SOLITAIRE.—C. G. Harrold has made two interesting records for this species, extending its known range far eastward in Canada. The first, a specimen taken at Lake Johnston,

Saskatchewan, May 10, 1922, and recorded by H. H. Mitchell (Canadian Field Naturalist,' XXXVIII, 1924, p. 101). The other a male just losing the last of its scaled juvenile plumage, taken at Stonewall, 23 miles north of Winnipeg, Manitoba, October 20, 1923 and recorded by him (Canadian Field Naturalist, XXXVII, 1923, p. 169). The latter specimen was kindly donated to this Museum.

National Museum of Canada, Ottawa, Canada.

FURTHER NOTES ON THE BREEDING BIRDS OF NORTHEASTERN GEORGIA.

BY THOS. D. BURLEIGH.

THESE notes supplement an article which recently appeared in 'The Auk' (Vol. XLII, No. 1, January, 1925) dealing with records taken during the summer of 1922 in the mountains in the northeastern part of Georgia. Since it was written I have had the opportunity, during the following three years, of continuing at irregular intervals my field work about Young Harris, Towns Co., Georgia, and the results I consider of sufficient interest to publish at this time. To a large extent my time was spent on the slopes of Brasstown Bald, and my first impression, that this rugged mountainside was worthy of all the possible time I could give it, has been more than justified. I feel now that I have acquired as yet but a very meager knowledge of the breeding bird life here, and that there is unlimited opportunity for future work along definite systematic lines.

In 1923 I was at Young Harris, May 22–24, accompanied by W. J. Erichsen of Savannah, Georgia, and later spent a little over a month, from June 20–July 26, in camp at the foot of the Bald, where unfortunately the larger part of my time was devoted to work other than ornithology.

In 1924 I found it possible to spend but three days May 2–4, in this locality, while in 1925 I was again limited to but three days here, May 26–28, W. J. Erichsen being again my companion on this latter trip.

Only those species are here listed whose occurrence in the state during the summer months has until recently been more or less conjecture. One, the Chestnut-sided Warbler, (*Dendroica pensylvanica*) is recorded as breeding for the first time in Georgia.

Loxia curvirostra minor. RED CROSSBILL.—I had known that these birds were credited with nesting as far south as northern Georgia but it was nevertheless a pleasant surprise to come across a flock of possibly thirty on June 25, 1923, feeding in the larger trees well toward the top of the Bald. The trees at this spot were entirely hardwoods, the chestnut and chestnut oak predominating, and as I had always associated this

species with conifers the birds appeared a little out of place as they searched the outer ends of the larger limbs for insects. They were well scattered and were noisy and restless, seldom remaining in one tree for more than a few minutes. Several were males in full plumage, and these sang more or less spasmodically during the half hour that they were watched.

Junco hyemalis carolinensis. CAROLINA JUNCO.—So little is known concerning the nesting habits of this species in the state, that I was glad of the further opportunity to add to the little knowledge I had already acquired. Seemingly a second brood is almost invariably raised during the latter part of June, and in 1923 two nests were found that helped verify this assumption. On June 27 as I was following a narrow ledge that crossed a wide sheet of rock on a very steep slope near the top of the mountain a bird flushed almost from beneath my feet and revealed a nest that held three very slightly incubated eggs. The rock was carpeted with a thick layer of green moss, and the nest was sunken in this and very well concealed. Apparently the moss here had merely been hollowed out and the cavity well lined with grasses, fine weed stems and a little 'possum hair. The second nest was found three days later, on the 30th, and likewise held three slightly incubated eggs. It was up four feet from the ground on a narrow ledge of a low cliff in open woods almost at the top of the mountain and was sunken in the green moss covering the rocks, and well concealed by a clump of weeds growing at the front and to one side of it. In construction it differed but little, the cavity in the moss being well cupped and lined with fine rootlets, grasses and cow hair. In 1925, but one nest was found, the bird flushing from four practically fresh eggs as I passed within two feet of her while following the trail to the top of the mountain. The nest was sunken in the ground at the base of and well in under a chestnut sapling on a steep slope at an elevation of approximately 4200 feet, and because of the scant undergrowth was afforded little concealment. This was on May 26, and, as indicated by the number of eggs, was unquestionably a first brood. The nest was compact and fairly substantial, and was built of weed stems, rootlets, bits of dead leaves, shreds of bark and a little green moss, lined with fine moss stems.

Melospiza melodia melodia. SONG SPARROW.—I was interested to note a very decided increase in the number of these birds about Young Harris my second summer there. I had found them fairly plentiful in 1922, but they are now one of the commonest of the breeding birds in this open mountain valley and occur wherever there are sufficient thickets or underbrush to offer them shelter. During July, 1923, I succeeded, with little effort on my part, in locating five nests within a short distance of the town, in each either eggs or young. The first, found July 4, held two eggs and two newly hatched young, and was two feet from the ground in a blackberry bush in a thicket at the side of a road. Another, that on July 23 held four fresh eggs, was four feet from the ground in the top of a small wild rose bush at the edge of an alder thicket covering a marshy

spot at the lower end of a large open field. A third, found July 25 with four small young, was a foot from the ground in a cluster of blackberry stalks at the edge of a hedge row dividing two open fields. All were alike in construction, being built of weed stems, rootlets and grasses, lined with fine grasses and a little horse hair.

Zamelodia ludoviciana. ROSE-BREASTED GROSBEAK.—The only spot in the state where this species breeds is on the slopes of Brasstown Bald but here the birds are fairly plentiful above an elevation of 4000 feet. A few scattered pairs may at rare intervals be seen farther down the mountainside, but I have never found them in the valleys nor in fact below 3600 feet. They apparently are limited in their distribution to the proximity of the scattered rhododendron thickets that are so characteristic of the higher slopes, and it is here that almost invariably the nests can be found. As might be expected the birds breed late, and it is the latter part of May before many are building. In May, 1923, a female was seen carrying nesting material to a nest but half built, and other birds noted that day were seemingly unconcerned as yet over domestic duties. It was the latter part of June before I had the opportunity to spend more time with them, and by then the young had in each case left the nest. A close search of the rhododendron thickets resulted in finding six nests from which the young had flown, all of them from five to ten feet from the ground at the outer end of a limb of one of the larger rhododendrons. From this limited experience I felt that it would be useless to look for a nest except in these rhododendron thickets, but the few days spent on the Bald in May, 1925, showed me that this preference was not always shown. The first nest, found on the 26th, was fully built but as yet empty, and was in the usual situation, fifteen feet from the ground at the outer end of a limb of a large rhododendron. A second nest found the same day, however, was twenty-five feet from the ground at the extreme outer end of a leaning yellow birch sapling, while a third nest found the following day, on the 27th, was fully fifty feet from the ground at the extreme outer end of an upper limb of a tall slender chestnut. In both these latter nests there were three fresh eggs, the first being compactly built of weed stems, rootlets, twigs and vine stalks, well lined with fine rootlets, the second rather frail and loosely built of twigs, sparingly lined with black rootlets. In each case the female was incubating and flushed reluctantly, showing great concern over my intrusion. These are to the best of my knowledge the first actual breeding records for the state.

Piranga erythromelas. SCARLET TANAGER.—This is a common breeding bird through the mountains in the northern tier of counties, but there are few actual records of the nest being found. With the little time at my disposal I succeeded in locating but one nest which, on June 22, 1923, held three eggs possibly half incubated. It was forty-five feet from the ground at the outer end of a limb of a tall slender black gum in open woods half way up the mountainside, and was compactly built of weed stems and rootlets, lined with fine weed stems.

Bombycilla cedrorum. CEDAR WAXWING.—It may possibly have been that, due to my experience with these birds the previous summer, and my familiarity with the country about Young Harris, I was merely in a better position to judge the actual status of the Cedar Waxwing here in 1923. Be that as it may, there was no question in my mind but that it was a common breeding bird in the open valleys, and I rather feel that there was at least a slight increase over the preceding year. Two nests were found July 1, in the open grove of scrub pines where in 1922 one pair had attempted to nest, in each half grown young. They were within fifty yards of each other, one forty feet from the ground and the other fully sixty, in the upper branches of the larger trees. Another nest found July 5 with five half incubated eggs was fifty five feet from the ground at the extreme outer end of a limb of a large black walnut tree in a farmyard. It was compactly built of hemlock twigs, weed stems, grasses, fine rootlets and wool, lined with the hemlock twigs, grasses, a little cow hair and light green lichens. A fourth nest, that on July 19 held three slightly incubated eggs, was in a situation very similar to this, being fully sixty feet from the ground at the extreme outer end of an upper limb of a large black walnut tree close to a house in a farmyard. It was likewise compact and well built of hemlock twigs, rootlets, weed stems, and grasses, lined more or less with dry pine needles and green lichens.

Lanivireo solitarius alticola. MOUNTAIN VIREO.—During the three days spent at Young Harris, May 22–24, 1923, seven nests of the Mountain Vireo were found, and the irregularity with which the birds apparently nested was rather unexpected. The first held half grown young and I decided then that these birds must be early breeders until I found a second nest fully built but as yet empty, and then a third with three fresh eggs. I was then about convinced that this first pair had nested unusually early, only to have this theory shattered by finding a fourth nest with young more than half grown. The next nest found was not quite built, another was apparently finished but still empty, and the last held four fresh eggs, causing me to reach the final conclusion that these birds nest at no fixed time but whenever the mood strikes them. Whenever and wherever is possibly the best phrase to use, for the birds are equally common in the valleys and well up the mountainsides, and the situation of the nest varies considerably. No preference is shown for any one tree for while two of the nests were in laurels they were also found in red maples, white oaks, yellow birch and mountain magnolia (*Magnolia fraseri*), and they varied in height from six feet to, in one case, as high as forty, although the average was between fifteen and twenty feet from the ground.

Dendroica caerulescens cairnsi. CAIRNS' WARBLER.—Actual breeding records for this species in the state being limited to the two nests which I found in 1922 the following data may be of interest at this time:

May 22, 1923, nest with four fresh eggs, two feet from the ground in a fork in a small laurel bush in underbrush partway up the mountain side, compactly built of shreds and strips of bark, well lined with black vine tendrils and light red moss stems.

June 23, 1923, nest with three slightly incubated eggs, two feet from the ground in a fork of a small viburnum in the middle of a small open thicket of these bushes in open woods partway up the mountainside, compactly built of strips and shreds of bark and bits of rotten wood, deeply cupped and well lined with fine black moss stems.

May 26, 1925, nest with three slightly incubated eggs, five feet from the ground, saddled near the end of a drooping limb of a rhododendron at the base of a large yellow birch well up the mountainside, well built of bits of rotten wood, shreds of bark and rootlets, well lined with fine black rootlets and a few light red moss stems.

May 26, 1925, nest with four fresh eggs, two and a half feet from the ground, in a fork of a small laurel bush at the edge of a laurel thicket in thick woods a short distance up the mountainside, compact but not very substantial, of pieces of rotten wood, shreds of bark and fine rootlets, lined with light red moss stems and a little horse hair.

Dendroica pensylvanica. CHESTNUT-SIDED WARBLER.—This species has never been recorded before as breeding in the state but in my experience it is fairly plentiful during the summer months on the open south slopes of the higher ridges leading from the Bald. I have noted a few singing males as low as 3500 feet, but it is only above an elevation of 4000 feet that these birds occur in any numbers. Within a few hundred yards of the top of Brasstown Bald the south slope is covered with small stunted oaks that are few enough in number to encourage a thick undergrowth of laurel and huckleberry bushes. In this limited area the Chestnut-sided Warblers are actually plentiful, and are among the few birds that can be found breeding there. On May 28, 1925, we spent the entire morning searching this spot for nests, and by noon had succeeded in finding three. All were within two feet of the ground, two being in laurels and one in a huckleberry bush, and while they were not so very well concealed the brush was so thick that it was necessary to be almost over them to see them. One held two half grown young and two infertile eggs, another two fresh eggs, and the third four fresh eggs, so seemingly individual pairs breed at widely separated intervals. The nests were alike in construction, and distinct enough not to be confused with those of any other species found here, being loosely and somewhat shabbily built of grasses, and a few rootlets and shreds of bark, lined with fine grass stems, and, in one case, a little horse hair, and held in place on the twigs by felted insect down and wool.

Seiurus motacilla. LOUISIANA WATER-THRUSH.—This is an abundant breeding bird through these mountains, there being few streams of any size where one pair at least cannot be found during the summer months. A nest was found May 4, 1924, that held four slightly incubated eggs, and was a foot and a half from the ground in a shallow depression in the upturned roots of a tree at the side of a small stream in a ravine. It was a large loose mass of dead leaves and a few grasses, deeply cupped and well lined with dry white pine needles and a little black horse hair.

The bird did not flush until almost touched and then fluttered away at the edge of the water feigning a broken wing.

Nannus hiemalis hiemalis. WINTER WREN.—As far as I knew, but one pair of these birds nested on the north slope of Brasstown Bald in 1922, so I was interested to note a decided increase in the number breeding here the following year. They were seen, and heard singing, in three of the rugged coves above an elevation of 4000 feet, and as it is hardly possible to cover this mountainside thoroughly in a few days I may easily have overlooked others. A nest was found May 22 that held five slightly incubated eggs, and that was two and a half feet from the ground well concealed in the top of the upturned roots of a large yellow birch that had but recently fallen. It was a loose ball of green moss, lacking the twigs that usually are used, the cavity inside being well lined with feathers of a Ruffed Grouse. The female was incubating and flushed when the nest was touched, returning however almost at once and showing real concern over our presence at this spot. This was at an elevation of approximately 4000 feet, and on a steep slope covered with tangled rhododendron thickets, moss covered boulders and fairly large timber that, however, was rather scattered and frequently found uprooted.

Hylocichla fuscescens fuscescens. VEERY.—As far as is known now this species breeds nowhere in the state but on the cool moist north slope of Brasstown Bald, and here it is rarely seen below an approximate elevation of 3200 feet. Nesting as it does only in the rather dense rhododendron thickets that are found but a short distance down from the top of the mountain, and that end rather abruptly around 3600 feet, its distribution during the summer months is of necessity rather limited, but within this small area it is fairly plentiful. The birds breed late, seldom before the latter part of May or the first of June, so my data are rather meager. Two nests that are probably normal in so far as the dates are concerned are one found May 22, 1923, practically built, and one May 27, 1925 but half built. A late nest was found June 24, 1923 that held but two slightly incubated eggs, and another a week later, on July 2, with three half grown young. All were a foot and a half to two feet from the ground in small bushy rhododendrons, and were alike in construction, being bulky and loosely built of large dead leaves intermixed with a few twigs and weed stems, well cupped and lined with fine black rootlets.

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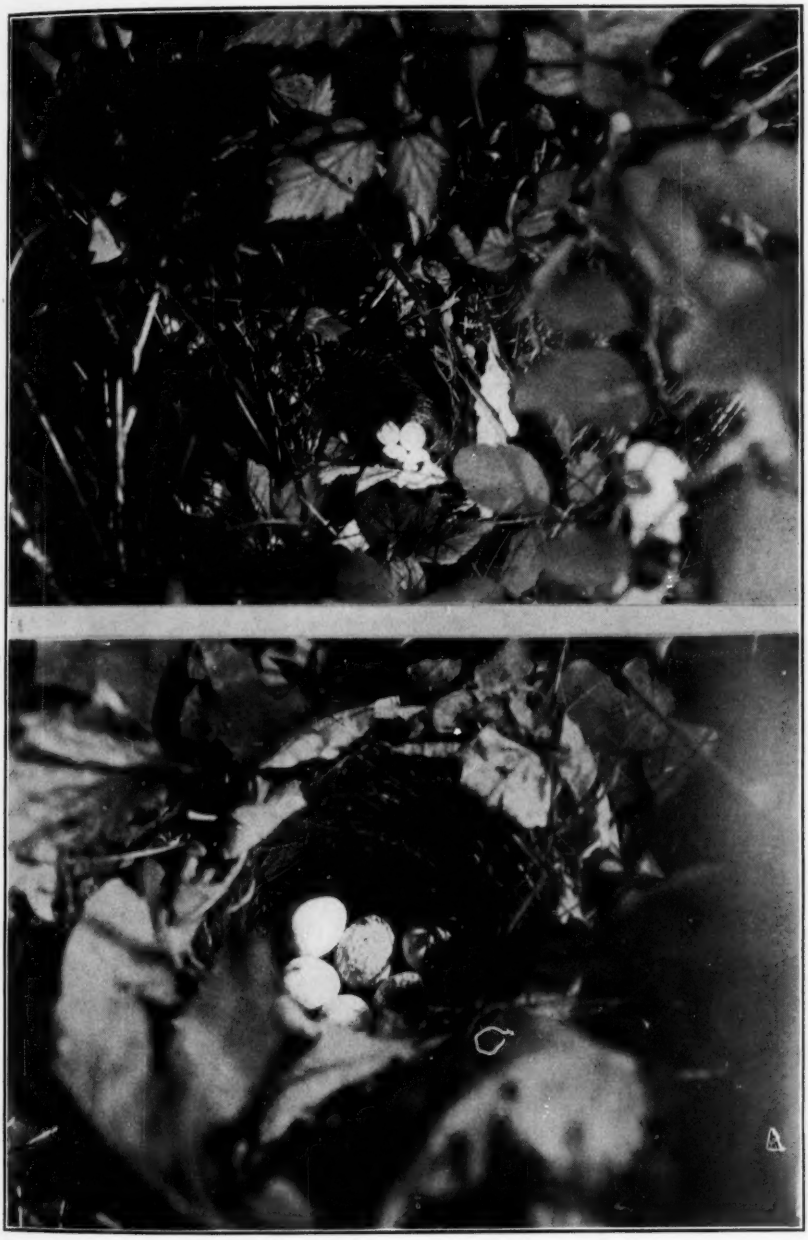

1. NEST AND EGGS OF GOLDEN-WINGED WARBLER, CROSS PLAINS, WIS.
2. NEST AND EGGS OF KENTUCKY WARBLER, WITH TWO EGGS OF THE COWBIRD, POTOSI, WIS.

UNIV. OF MICH.

NOTES ON THE DISTRIBUTION OF SOME WISCONSIN BIRDS. I.

BY A. W. SCHORGER.

A FEW years ago while studying the information available on life zones, the writer formed the conviction that certain species of birds, considered rare in Wisconsin, should occur as summer residents in the southwestern portion of the state. It has recently been possible to obtain substantiating data whereby several species, particularly the Kentucky Warbler, Bell's Vireo and Tufted Titmouse, are placed in the definite position of summer residents. The impossibility of giving life zones precise boundaries is realized; however, on the basis of avifaunal[1] the Carolinian or Pseudo-Carolinian area of the Upper Austral zone, as given by Merriam,[2] should be extended to include the lower Wisconsin valley as far north as Columbia County. Within this portion of the valley are to be found breeding such typical species as the Cardinal, Tufted Titmouse, Blue-gray Gnatcatcher, Yellow-breasted Chat, Kentucky Warbler, Blue-winged Warbler, and Louisiana Water-Thrush.

Each of the several brief field trips in the southwest was of the nature of a reconnaissance, special search being made for Vireos and Warblers. Only a few places could be explored with any degree of thoroughness, so that many territorial gaps exist. These notes are in no sense an attempt to define breeding areas as the data at hand are too few for this purpose.

Bartramia longicauda. UPLAND PLOVER.—A regular summer resident in small numbers, in Iowa County, near Dodgeville, and in Green County, in the open, rolling country between Monticello and Monroe. My records for Dane County are scanty: two birds, April 26, 1925, near Lake Waubesa; and four, June 14, 1924, near Verona, where they are locally reputed to be of regular occurrence.

Empidonax virescens. ACADIAN FLYCATCHER.—The first state record for this species was obtained by H. L. Stoddard,[3] who found it

[1] My friend, James G. Sanders, collected in the Mazomanie region, several species of leaf hoppers, not previously known to occur north of Tennessee. (Ann. Entomological Society of Am., 10 (1917)79).

[2] Bulletin No. 10, U. S. Biological Survey (1898).

[3] Auk, 34 (1917) 66.

nesting in the Baraboo Bluffs, Sauk Co., in 1913. He also found it in a tamarack swamp in Waukesha Co., in 1921.[1]

I found it in only one locality at Potosi, Grant Co., where it was common. Near Grant River there is a heavily wooded bluff, intersected by numerous ravines in which the birds were established. On June 17, 1924, I collected one of six singing birds. Two nests containing two and three fresh eggs, respectively, were found in typical situations in the bottom of the ravines. The species was as plentiful the following year.

Previous to the trip to Potosi I had been unable to find this Flycatcher in Dane County in spite of much effort. The experience gained as to habitat led me to suppose that the hilly, northwestern portion of the county was most promising. After several fruitless trips, I finally located a pair near Cross Plains, July 5, 1924, and collected the male. The birds were found in a picturesque spot beside a cliff, at the base of which the ground was carpeted with brakes waist-high; surrounding all, was an extensive tract of heavy timber.

My opinions as to habitat were shattered by the collection of a male, in the Mazomanie bottoms, on May 31, 1925. On June 12, two males were found in a similar situation at Mill Bluff in Sauk County.

The essential requirement of the Acadian Flycatcher appears to be a large tract of undisturbed timber. The typical habitat is a deep, well wooded ravine having a rocky stream bed, which is usually dry. It may also be looked for in the heavy timber of the river bottoms and in tamarack swamps in the southern portion of the state. The majority of apparently suitable localities are uninhabited. Though sight records are of little value, this species has so typical a note that it is not easily overlooked.

Cathartes aura septentrionalis. TURKEY VULTURE.—My sole state record is a bird seen at Potosi, June 8, 1925.

Spyrapicus varius varius. YELLOW-BELLIED SAPSUCKER.—An uncommon summer resident in the southern portion of the state. One was found on a river birch in the bottom lands at Potosi, June 16, 1924.

Phloeotomus pileatus abieticola. NORTHERN PILEATED WOODPECKER.—This is still a common species along the Mississippi and Wisconsin rivers, and in the virgin hardwood forests of the northern portion of the state. I found it: at Herbster, Bayfield County, November 11–13, 1913; along the Potato River, Iron County, November 12, 1915; along the Wolf River, Langlade County, October 3, 1925; and near Boulder Junction, Vilas County, October 4–5, 1925.

On June 9, 1925, at Potosi, I was attracted by the cries of young to a nest, fifteen feet from the ground, in a basswood stub. Both parents were present, but after much protesting soon left the vicinity. The young appeared to be fully feathered and ready to leave the nest. One young occupied so large a portion of the entrance that there was only room for the head of another. A short distance away stood a tall, live basswood

[1] Wilson Bulletin 34 (1922) 76.

having three nesting holes about five feet apart. Several other nesting holes were observed in living trees, all of which were basswood. Excavating in this soft wood is easy for so powerful a hewer.

Corvus corax principalis. NORTHERN RAVEN.—A pair was seen and heard along the Potato River in Iron County, November 12, 1915.

Vireo griseus griseus. WHITE-EYED VIREO.—This is the rarest of the Vireos. The only record in recent years is the one taken at Madison by the writer on October 10, 1923.[1] I have searched in vain for this species in the southwestern portion of the state, but it will doubtless be found to be a regular summer resident in certain localities.

Vireo belli belli. BELL'S VIREO.—The first state record is represented by a male taken by the writer at Madison, July 3, 1914. The statement in the published note,[2] to the effect that the bird was probably not breeding was due to an unfortunate misunderstanding. The testes were greatly swollen. On June 9, 1922, Mr. Warner Taylor[3] found a pair nesting in the same locality and took the male.

I was unable to find it at Potosi in 1924, though confident that it should be resident. On June 9, 1925, I heard one singing in a clearing and collected it. The following day I worked the region a few miles south of Boscobel. Here, after collecting another male, I found Bell's Vireo to be common. Nearly all of the numerous patches of hazel contained from one to two pairs. This is an excellent example of localization, but it is somewhat surprising that the species should have been overlooked so long. To find this Vireo, it is necessary to rely almost entirely on the feeble but very characteristic song. The breeding range as given in the Check-List may be extended to include the southwestern portion of the state, bounded on the north by Madison and the Wisconsin river valley.

Protonotaria citrea. PROTHONOTARY WARBLER.—This is an abundant summer resident along the Mississippi river and in the Wisconsin valley at least as far north as Okee, Columbia County. Deposition of eggs begins the last week in May, and young able to fly have been noted by June 28.

Vermivora pinus. BLUE-WINGED WARBLER.—This species is a locally common summer resident in the southwestern portion of the state, though formerly considered rare by various observers. My only record for the immediate vicinity of Madison is May 18, 1924. The bird flew after being shot, and fell in brush where it could not be found. At New Glarus, Green County, on June 14, 1924, I collected one of three singing birds. It has been found in two localities at Potosi, at Spring Green in Sauk County, and at Mazomanie in Dane County, where it occurs in numbers. It may be expected to occur in western Wisconsin as far north as Buffalo County, since it breeds in southeastern Minnesota.

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[1] Auk, 41 (1924) 347.
[2] N. DeWitt Betts, Auk, 31 (1914) 542.
[3] Auk, 39 (1922) 575.

In the Wisconsin river bottoms it is found where there are open stands of trees and bushes, and a luxuriant growth of grass.

Vermivora chrysoptera. GOLDEN-WINGED WARBLER.—This species is less common as a summer resident in southern Wisconsin than *V. pinus*. It breeds in small numbers at Mazomanie, and in two localities near Cross Plains, Dane County I have also found it in June in the southern end of Richland County, near Muscoda.

The nest in the accompanying photograph contained one egg when found on June 13, 1925. During my stay in the vicinity, the female inspected the nest about every five minutes. The male always accompanied her to the nest but passed on when she stopped. My next visit was on June 19 when there were four eggs.

The cone-shaped nest, placed at the base of a bush on the side of a ravine. had the following dimensions: outside, 3.25 x 4.00 x 3.25 inches high; inside 1.75 x 2.25 x 1.60 inches deep. The exterior consisted of a thin layer of leaves of the white oak, the walls of long thin strips from the exterior of the stems of various annuals, and the lining of stiff, brown, bast fibers that were not identified.

Dendroica cerulea. CERULEAN WARBLER.—This species was considered rare by Kumlien and Hollister. Stoddard found it common in the Baraboo Bluffs in 1913. It is an abundant summer resident at Potosi and common in suitable localities throughout the southwestern portion of the state. I have found it in numbers at New Glarus, Cross Plains, Mazomanie, Mill Bluff, Spring Green, and Boscobel.

The Cerulean Warbler is found mainly in moist rich woodlands containing tall, dense timber, in both the uplands and river bottoms. I, however, collected a male at Potosi, June 17, 1924, in a thin stand of oaks about 30 feet high, on the top of a rocky bluff. The birds are not often found below the level of the tree tops.

Seiurus motacilla. LOUISIANA WATER-THRUSH.—This is a fairly common summer resident along the Mississippi and Wisconsin rivers. At Potosi, June 9, 1925, I found a pair in a ravine where a spring trickled over a rocky ledge to form a miniature fall. One of the birds, a female, was collected. The largest ova were 2 mm. in diameter. One of two singing males was collected at Mazomanie, May 31, 1925. I have also found it in June at Spring Green and Mill Bluff. In the bottom-lands of the Wisconsin it is found near the small ponds and sloughs in the deep woods.

Oporornis formosus. KENTUCKY WARBLER.—It is a pleasure to state that this supposedly rare Warbler is not uncommon as a summer resident, and to record the discovery of the first nests. Kumlien and Hollister mention seven specimens and state—"We appear to be a little too far north for this exquisite species." The only other printed record refers to a pair taken in Dane County by Stoddard, June 13, 1913. Had I so desired, I could have taken a dozen specimens in a morning.

I began my exploration of the Potosi region early on the morning of

June 16, 1924. While walking along the side of a wooded ravine I was stopped by a song that I did not recognize. A moment later a Redstart came dashing past pursued by a bird that alighted on a sapling a few feet from me; the pursuer was a fine Kentucky Warbler. Before I could unlimber my gun, the bird disappeared in a thicket and could not be seen. Greatly disappointed, I resolved to continue the search after breakfast. While returning to the hotel by an old road, a female suddenly flushed near my feet. The bird and her nest, containing 4 eggs of the owner and 2 of the Cowbird, were collected. The nest was well concealed by sprouts growing from an oak stump. It was a bulky affair of leaves and lined with dark rootlets and horse hair. The dimensions were: outside, 5.0 x 6.0 x 2.75 inches high; inside, 2.0 x 2.5 x 2.25 inches deep.

On June 18, I nearly stepped on another nest containing a fine set of 5 eggs. In marked contrast with the former, this nest, situated at the bottom of a ravine, was plainly visible from all directions. The only protection was a seedling maple bearing a few leaves. Both birds sat very closely and left the nest with hysterical cries.

At Potosi, the Kentucky Warbler was found in two regions, about three miles apart, where there were richly wooded ravines. During the visit of 1925, I was impressed by finding pairs within a short distance of the places occupied the previous season. Judging from areas in which it is known to be a summer resident, this species shows a decided preference for thickets of prickly ash (*Zanthoxylum americanum*).

On May 31, 1925, I observed three singing males in the woods in the Mazomanie bottoms. Mr. Warner Taylor took a female here a week previously. It seems to be the same locality in which Stoddard collected his pair.

Anderson[1] states that the Kentucky Warbler reaches "about its northern limit in Jackson and Blackhawk Counties"; this would be about latitude 42° 30′, or the southern boundary line of Wisconsin. Its occurrence at Mazomanie extends the northern range to at least 43° 15′. This species has not been taken in Minnesota,[2] but it will probably be found to be a summer resident at some distance north of the mouth of the Wisconsin river.

Wilsonia canadensis. CANADA WARBLER.—At Potosi June 9, 1925, I found a bird singing in a habitat such as it chooses for breeding in northern Wisconsin. The bird had that "fixed" air indicating nesting.

Parus bicolor. TUFTED TITMOUSE.—At the time of the publication of Kumlien and Hollister's work, but one specimen had been obtained in the state. Within recent years, this species has been irregularly common in winter and early spring, though no breeding records are extant.

I found a single bird in the valley of Grant river at Potosi, June 17, 1924. None were observed the following year. I had expected to find

[1] 'The Birds of Iowa,' Proc. Davenport Acad. of Sciences, 11 (1907) 359.
[2] Roberts, "A Review of the Ornithology of Minnesota" (1919).

the species fairly common. On June 11, 1925, I found a pair in the river bottoms at Spring Green. The birds disappeared after being watched for some time. Returning an hour later I found one in the same spot, but could obtain no satisfactory evidence of breeding. The following day I heard one calling in the woods at Mill Bluff. On June 28, Mr. Warner Taylor and I went into the bottoms at Mazomanie. While walking towards the river we heard a Tufted Titmouse. Investigation disclosed a family consisting of two old and five young birds. I took one of the latter, a female, which is now in my collection. This is the first breeding record for the state.

While there is little doubt that this species has extended its range northward within recent years, it has probably been a regular summer resident in small numbers, but has been overlooked.

Mimus polyglottos polyglottos. MOCKINGBIRD.—A single bird was seen near Devil's Lake, July 26, 1916. Unfortunately, I had no means for collecting it.

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GENERAL NOTES

Brünnich's Murre and Goshawk in Saratoga Co., N. Y.—On December 15, 1926, Mr. George Riley of Saratoga Lake, N. Y. while fox hunting in the town of Wilton, Saratoga County, flushed a Goshawk (*Astur atricapillus atricapillus*), from a swamp near Kendrick Hill. Noticing that it was carrying another bird, Mr. Riley fired bringing both to the ground. The prey of the Goshawk proved to be a specimen of Brünnich's Murre (*Uria lomvia lomvia*), in good plumage except where partially plucked on the breast.

Through the interest of Messrs. Edwin Corning and Benjamin W. Arnold, of Albany, the specimens were secured and presented to the New York State Museum.—SHERMAN C. BISHOP, *New York State Museum.*

Sabine's Gull in Ohio.—A male specimen of Sabine's Gull (*Xema sabinei*), in immature plumage, was taken on Licking Reservoir, Fairfield County, Ohio, October 9, 1926, by Milton B. Trautman, and is preserved in the Wheaton Club collection in the Ohio State Museum at Columbus.

The species is admitted as an Ohio bird on the strength of a Gull taken many years ago in Cleveland Harbor by R. K. Winslow and kept in the museum of the Ohio Medical College until destroyed by vermin previous to 1882. Trautman's record is of interest aside from furnishing knowledge of the recent occurrence of the species in Ohio as it furnishes the farthest south locality we have noted for the species on the American continent east of the Mississippi River.—JAMES S. HINE, *Ohio State University, Columbus, Ohio.*

Ivory Gull in Manitoba.—On December 24, 1926, I received from Mr. T. H. P. Lamb of Moose Lake, Manitoba, a bird in the flesh, with the following data: Shot Dec. 11, 1926, at Egg Lake, n. of Moose Lake; apparently a freak gull. Name of sender Wm. McKenzie."

The "freak" was a beautiful adult female Ivory Gull (*Pagophila alba*) and constitutes the second record of the species for Manitoba. There was nothing in the stomach and the bird seemed to be somewhat emaciated. It measured: length 17 in., spread 40., folded wing 12.5, tail 5.10, bill 1.25, tarsus 1.37.

The first record is based on a mounted specimen in the collection of the late E. W. Darbey and is a juvenile in the mottled gray and white plumage. It was taken at Woodland, Manitoba, December 27, 1915.—B. W. CARTWRIGHT, *355 Woodlawn St., Deer Lodge, Winnepeg, Man.*

Kittiwake Gull in the Caribbean Sea.—On March 8, 1926, off the east coast of Jamaica but out of sight of land, an immature Kittiwake (*Rissa tridactyla*) followed the steamer *Ruapehu* for over an hour, and I had excellent views of it. Though it still had the juvenal plumage of the wings

and tail its bill was dull yellow and its feet black, whilst instead of a black band on the back of the neck it had only some dusky streaks. This plumage is not usually described in text-books so that I had thought that my notes indicated a bird which had acquired the adult colouring of bill and feet prematurely. On reference to Dr. Dwight's recent monograph of the Gulls of the World (Bull. Amer. Mus. of Nat. Hist., vol. LII, p. 320), I find this plumage described as the "First Nuptial Plumage" from a specimen obtained on Long Island on March 17. I feel confident therefore that the bird observed by me was a Kittiwake though there appears to be no record of the occurrence of this species in the Bahamas, West Indies or Caribbean Sea.—W. B. ALEXANDER, *Croydon, England.*

Nesting of the Herring Gull and some other birds on Lake Erie Islands.—On June 10, 1926 in the company of Prof. F. H. Herrick and Mr. Fuller of the Cleveland Museum, I visited some of the islands of Lake Erie.

Our primary object was to determine if the Bald Eagles nested on any of the islands except Kelley's.

We first visited Kelley's Island and found that but one pair of the Eagles had nested there, the other nest being deserted. The only other nest found was on Rattlesnake Isl. Here the birds last year deserted a perfectly good nest and built a new one in another tree some hundred feet away but in a higher position.

In a small swamp on Kelley's Island were found a number of other nests, some of interest. A very tame King Rail was found, or he found us for he had no idea of flying but only of clucking loudly for us to go away. After some further exploring we found a nest of a King Rail, possibly his, but away across the swamp. There were nine eggs in the nest, which was built in a clump of bur-reed, and made of the same material. The water about it was about 14 inches deep. Later, in July, I visited the nest and found that the eggs had apparently all hatched but one.

In this marsh we found five sites of what looked like Black Tern nests. Only one of these was in use but there were six birds flying resentfully about us. This one nest had one egg on the 11th and a second on the 12th.

The female was tame enough to permit us to make some beautiful pictures of her at the nest.

We then secured a motor boat and visited Starve Island, some miles up the Lake. Here on a small reef 100 by 500 feet we found fifteen or eighteen hundred of the Common Tern nesting. It is so interesting a colony and so beautiful an islet that it should be preserved as a bird sanctuary. Our next islands were also the home of the Common Tern. Some of the nest sites make most beautiful pictures, for these little Devonian limestone islands are ledged along the shore, and the ledges are the home of fern, columbine and pentstemon, as well as the domicile of the graceful Terns, sitting on their eggs and outlined against the lichens and ferns above the water, making a picture indeed.

It began to rain at 11:30 as we approached N. W. Chicken Island. There were many Herring Gulls with the Terns on the Islet. When we were near the shore a Black Duck swam away carrying two downy young on her back. I had never seen this before—a most interesting sight.

A number of Cormorants were in the flock of birds that flew up and circled about us. Mr. Fuller and I rowed ashore. There was no verdure on the island but a great Canada thistle set between two glacial bowlders and there at the foot of the thistle was a Herring Gull's nest with three eggs. These birds rarely nest in Ohio and I know of no record.—C. M. SHIPMAN.

The "new" Bermuda Shearwater proves to be Puffinus puffinus puffinus.—A specimen of a Shearwater taken in Bermuda "sitting on a single egg," March 10, 1905, and later described as a new race, *bermudæ* (Auk, XXXIII, 1916, p. 195), now proves to be indistinguishable from the typical Manx Shearwater. I have recently examined and remeasured this specimen, the type of *bermudæ*, in the American Museum of Natural History, and direct comparison made between it and European birds shows that it is easily referable to *Puffinis puffinus puffinus*, not differing either in size or coloration.

The races of the Manx Shearwater differ chiefly in the extent of white on the under tail coverts, axillars and wing-lining. In typical *puffinus*, the bird of the North Atlantic, the pure white is hardly broken by slightly brownish or grayish edgings; in *yelkouan*, the Levantine Shearwater of the eastern Mediterranean and Black Sea, the edgings are conspicuous; and in *mauretanicus*, of the western Mediterranean and adjacent Atlantic, the coverts as well as the flanks, are strikingly dusky. The difference in size between the races is slight and the sexes are practically alike both in size and plumage. The Bermuda specimen has the whiter coverts of *puffinus* and not the darker ones of the other two races and the subjoined measurements, based upon an equal number of each sex, mostly breeding birds, show that it falls quite within the average of *puffinus*.

Eight specimens of *puffinus;* wing, 213–232(227.4) mm.; tail, 70–81 (74.5); tarsus, 42–46(44.2); toe with claw, 44–52(48.0); culmen, 32–37 (34.6); depth of bill at nostril, 7–9(8.0); width of bill, 6–7(6.3).

Type of *bermudae*, wing, 225 mm.; tail, 71; tarsus, 44; toe, 51; culmen, 36; depth, 8; width, 6.

The taking of this bird recalls an earlier record of "*Puffinus anglorum*" (= *puffinus*). A bird was "captured while sitting on its solitary egg in a rocky hole on the south shore some years ago" (Zoologist, 1877, I, p. 491), but it is possible that this bird recorded by Lieut. Reid was Audubon's Shearwater (*Puffinus lherminieri*), a species known to breed in Bermuda, for he makes no mention of this species. At all events the recent record definitely extends the breeding range of the Manx Shearwater to the western side of the Atlantic where previously it has been considered only as a very occasional straggler.—JONATHAN DWIGHT, *American Museum of Natural History, New York.*

Leach's Petrel (Oceanodroma leucorhoa) in South Carolina.—On September 20, 1926, I found on the beach of Long Island (Isle of Palms), the wing of a bird that I at once recognized as a Petrel; it was under a pile of sedge at high water mark, near the spot where I found remains of the Bridled Tern (*Sterna anaetheta*), Sooty Tern (*Sterna fuscata*) and Audubon's Shearwater (*Puffinus lherminieri*) after the West Indian hurricane of July 29 last.

After a study of the wing I concluded it was that of *Oceanodroma leucorhoa*, it was sent to the U. S. National Museum, and Mr. J. H. Riley, confirmed my identification, . . . and added "This is a record for South Carolina."

Mr. Arthur T. Wayne in 'Birds of South Carolina' places this bird in the Hypothetical List and says that "it appears to be well-known to the Charleston pilots, who state that it is often seen during the winter months."—EDWARD VON S. DINGLE, *Mount Pleasant, S. C.*

The Blue Goose at East Goose Creek, Florida.—Somewhat by chance I was at East Goose Creek, Wakulla County, Florida, at midday November 25, 1926, and discovered that Mr. George E. Lewis, of Tallahassee, had that morning killed a Goose from his stand at the end of what is locally known as Patty's Island, about two miles out in front of the beach at this place, which I was informed was a Brant. My curiosity being aroused, I immediately went to his bungalow to examine the specimen. I found that it was an immature Blue Goose (*Chen caerulescens*) in very good plumage but in rather an emaciated condition. I obtained the head, foot, and diagnostic feathers from various portions of the body, and sent them to the Biological Survey. The following is Mr. Lewis' written statement as to the capture of this specimen: "I believe I saw one other but not at the same time as the one I shot. This other one was some distance from me but flew like the one I shot and looked different from the Canada Goose. I do not know definitely of any other Blue Goose having been shot at Wakulla Beach (a rather pretentious name recently applied to East Goose Creek) but some of the fishermen told me they had seen several others. The one I shot was alone as was the other one I think was a Blue Goose. I had never seen one before to know it. I was standing on the S. W. end of Patty's Island using profile decoys for Geese when the Blue Goose came along. I had my boat along shore partly hid, but not well, in the grass only about 100 feet away and did not expect to get any shooting from the west on account of the boat being exposed from this side. However, the Blue Goose came from the west and I believe was decoying to my profile decoys when I noticed him. You remember how poor he was? The fishermen said the others they had seen were also very poor. I understood my father to say that he had never seen a Blue Goose and he has shot on the coast many times."

Mr. W. L. McAtee procured a Blue Goose at St. Vincent Island, Florida, November 1, 1910 (Auk, XXVIII, 273), and Mr. R. J. Longstreet recorded

one seen at Seabreeze, on the east coast of the State, on November 13, 1924 (Auk, XLII, 264). The first Florida specimen was taken at the Tortugas April 5, 1859, by Capt. D. P. Woodbury. St. Vincent Island is about 60 miles west of East Goose Creek, in Franklin County.—R. W. Williams, *Takoma Park, Maryland.*

Whistling Swan (Olor columbianus) at Cold Spring Harbor, Long Island, N. Y.—Whistling Swans on Long Island are exceptionally rare, if not accidental. Eaton in the 'Birds of New York' gives four authentic records for the island and Griscom in 'Birds of the New York City Region' gives several less definite for Orient in recent years. It was therefore with considerable pleasure that we observed, under most favorable conditions, five of these birds at Cold Spring Harbor on November 14, 1926.

At eleven o'clock in the morning the series of four small fresh water lakes situated near the harbor was deserted, save for a solitary female Scaup. On our return, about an hour later, the Swans had arrived, presumably from across Long Island Sound. Two were adults in immaculate plumage and three were juveniles with light grayish brown heads, necks and upper surfaces. The bills of the adults were black with an elongate yellow spot in front of the eye. This character was plainly visible and, coupled with the absence of a knob or "berry," served to eliminate the possibility of their being Mute Swans with which we are familiar. Occasionally, as they fed, indications of a pinkish or salmon-colored lining of the mouth were noticed. In the young birds, the bills were dark at the tip and base and mottled pinkish and bluish in the middle region. The neck was more thickly set and was carried somewhat straighter than is that of the Mute Swan. At frequent intervals a peculiar arching or bobbing of the neck was indulged in, accompanied by an indistinct musical note, barely audible at one hundred yards. On a previous occasion this fall, one of us (Bowen) whilst in the company of Mr. Charles Urner, had the pleasure of watching this species at Barnegat Bay, N. J., and was much impressed by this peculiar habit, although at the time no sound was heard, due, no doubt to the greater distance at which the observations were made.

Apparently tired and hungry, the birds were very loth to fly and fed ravenously near some lily pads in water about four feet deep, paying little or no attention to the close proximity of a well traveled highway and other evidences of man's activities. On one occasion, in its efforts to secure some particularly appetizing morsel, one of the birds almost toppled over backwards, but, by struggling and waving its black feet in the air, regained its balance and returned once more to a more natural posture. For half an hour they were observed through 8 × binoculars at approximately one hundred yards in clear, brilliant sunlight. Eventually they were startled and, stretching long necks to their fullest extent, pattered over the water for about ten yards and flew southward overland in echelon formation.—W. Wedgwood Bowen and Rudyerd Boulton, *New York City.*

Great Blue Heron (Ardea herodias) Electrocuted.—On October 30, 1926, a male specimen of the Great Blue Heron was picked up directly beneath several high power electric light wires and brought to me. It evidently had been killed instantly. The skin and feathers had been burned off from a space several inches in length on the back of the neck, a little way up from the body. The left thigh and tibia also were bare of feathers and skin. It must have struck two wires in its flight thus creating a short circuit. There were no other injuries. The skeleton was in perfect condition and is now in the Zoological Museum of the University of Arkansas.—ALBERT LANO, *Fayetteville, Arkansas.*

American Egret at Chicago, Ill.—On September 10, 1926, the writer in company with P. Brodkorb, saw five American Egrets (*Casmerodius egretta*) at Calumet Lake, Chicago. Due to the wariness of the birds, no specimens could be collected.—JAMES STEVENSON, *Wooster, Ohio.*

Nesting of the Black-crowned Night Heron in Western Kansas.—In July 1925 I had the opportunity of visiting the breeding grounds of a colony of Black-crowned Night Herons (*Nycticorax nycticorax naevius*) in Stafford County, Kansas. At this time I was with a collecting party which was in charge of Mr. C. D. Bunker, Assistant Curator of Birds and Mammals at the University of Kansas Museum. We were working in the interest of the Museum and the State Biological Survey. Nearly two weeks were spent in the vicinity of the Little Salt Marsh which is located about 13 miles northeast of Stafford Kansas.

The marsh with its flat sandy mud beaches and shallow water is an excellent feeding ground for shore and water birds. Nearly a mile northwest of the marsh is a grove of cottonwood trees which covers approximately ten acres. There are no other trees within two miles of this place, and these are near a farm house. This Cottonwood grove was evidently set out in the early days when the country was new, and is bounded on all sides by open prairie. There is practically no underbrush in it while the trees are from 40 to 50 feet in height and are close enough together so that the tops touch.

Upon entering the grove one could hear the coarse squawking of the Herons on all sides. Adult birds took to wing and circled over the tree tops while immature birds flew awkwardly from limb to limb or craned their necks from the nests. One young bird was found dead on the ground. From three to five nests about 24 inches in diameter and poorly constructed of small dry sticks could be seen in the top of nearly every tree. There were in all several hundred nests in this grove, but from their appearance only about fifty per cent of them had been in use that season. I would roughly estimate the number of birds in this colony at one thousand.

The ground was littered with droppings from the birds and with small fish which had been dropped or regurgitated. This gave an odor to the place which was anything but pleasing. The fish could be heard dropping intervals from the nests.

A few of the adult birds remained about the marsh in the daytime, feeding in the shallow water along the shores. In the evening they could be seen flying from the marsh to the grove and back again, presumably carrying food to the young. Five adult and two young birds were collected and are now in the museum bird collection.

This is to my knowledge the only report of a colony of Black-crowned Night Herons nesting in Kansas.—W. H. Burt, *Kansas University Museum.*

The Long-billed Curlew (Numenius americanus) near Mount Pleasant, S. C.—On January 10, 1927, I flushed a bird of this species within a few hundred yards of my house in short salt marsh. The afternoon on which I observed this splendid species was bitterly cold and I could scarcely believe that I was not mistaken, as the last one I had seen in S. C., was on September 23, 1899 when I shot a fine one on this plantation. The bird suggested at once a Marbled Godwit but the long, decurved bill was diagnostic, besides in the late seventies and early eighties I had seen these birds with my friend Mr. Ellison A. Smyth, Jr., in great numbers near Charleston. Although I had my gun with me I never fired a shot at it being only too glad to see the bird again after 28 years.—Arthur T. Wayne, *Mount Pleasant, S. C.*

Nesting of the Upland Plover in Philadelphia, Pa.—On June 11, 1926, I found an Upland Plover's (*Bartramia longicauda*) nest containing four slightly incubated eggs, at Cottman Park, near Frankford, in the northeastern part of the city. This section of Philadelphia was until several years ago given over entirely to truck farming but has not since been farmed on account of real estate developments. The cessation of gardening caused the truck farms to revert to grass and weed fields, completely changed the local environments, and brought back again the Upland Plover to its old haunts where it bred many years ago. Unfortunately its occurrence here as a breeder will be short-lived on account of the rapid development of this section into building lots.

The nest was situated in a corner of a ten acre field of grass and weeds, mostly of Andropogon grass and goldenrod, within about one hundred yards of two roads, in the corners of which were several occupied houses; a trolley line ran over one road and hundreds of automobiles passed daily over both of them. I was surprised to find this shy Sandpiper nesting so close to dwellings, and amazed to discover a nest in Philadelphia. On June 23, 1903 I saw one of these birds less than a half mile north of this locality, and on June 4, 1926 I saw a pair at Bustleton. They were flying low over a large grass field and undoubtedly nested there, but we made no search for the nest. These are my only records in the past 23 years.—Richard F. Miller, *Philadelphia, Pa.*

Wilson's Phalarope in the South Pacific Ocean.—On February 26, 1926, when travelling from New Zealand to England via Panama on the

S.S. *Ruapehu* our official noon position was 14° 26′ S., 100° 40′ W. Reference to a map will show that this is about half way between Easter Island and the Galapagos group and roughly 1,000 miles from each and from the coast of Peru. Greatly to my surprise I saw a small bird on the water ahead of the ship about 4:30 P.M. and it remained settled on the calm sea till we were quite close to it. It then rose and flew straight away over the water to the northward with rapid wing-strokes. Before this I had seen through my 8 power glasses that it was a Phalarope with a conspicuous dark band on the side of the head continued down the side of the neck This appears to identify it beyond a doubt as a Wilson's Phalarope (*Steganopus tricolor*) in spring plumage. This species is known to winter "from central Chile and central Argentina south to the Falkland Islands" so that this observation extends its winter range to the westward over the South Pacific, unless the bird's presence in the locality was purely accidental. This is perhaps suggested by the fact that it was solitary.—W. B. ALEXANDER, *Croydon, England.*

Lapwing (Vanellus vanellus) in North Carolina.—Late on the afternoon of November 11, 1926, a strange bird was seen on the edge of a field near Siler City, Chatham County, North Carolina. The next morning, Mr. Edward T. Noel, of Siler City, on whose land the bird had been seen, took the field with one of his tenants to try to secure the stranger, which they succeeded in doing.

Three days later, Mr. Noel brought the bird to me for identification, and as a donation to the Museum—if we cared for the specimen! It proved to be a perfectly-plumaged male Lapwing (*Vanellus vanellus*) or Peewit, as we called it when I was learning wing-shooting during my boyhood in England a good many years ago, where the species was plentiful.

Our bird is, of course, in winter plumage, but fully adult. Decomposition had set in by the time the specimen reached my hands, the feathers slipping rather badly on the belly during the skinning, though not enough to prevent it making a first-class mount. It was in fair physical condition, with fragments of food in the gizzard which was preserved and will be sent to the U. S. Bureau of Biological Survey for examination.

The specimen showed the following dimensions and weight: length 13.62 ins.; wing 8.75; tail, 4.12; tarsus, 2.62; extent of wings, 29.5; longest feather of crest, 3.38; weight, 5.25 ozs.

So far as my information goes, this is the fourth specimen recorded from the continental United States, the other three having been taken on Long Island, N. Y., in 1885 and 1905.—H. H. BRIMLEY, *Raleigh, N. C.*

Near Cannibalism in a Buteo.—The morning of April 25, 1925, I was walking up the inlet of Keuka Lake at Branchport when I noticed a lot of feathers under a large willow tree and investigating found a freshly killed Red-shouldered Hawk. The head and neck were missing though I did find a small piece of the skull. The body was plump and was still warm. Evidently I had interrupted the feast of some animal (?) that had fled without

my seeing it. On up the creek I flushed a Red-tailed Hawk from a tree at the edge of the woods along the inlet and it flew out around me and off down the creek.

Returning on the opposite side of the creek about an hour later, I took care to keep under cover until I could get a good look at the dead Red-shouldered Hawk and when I did see it the Red-tailed Hawk was there feeding on it. I used my binoculars and could see very plainly that it was a Red-tailed Hawk. There must have been a pretty good fight between the two birds before the Red-shoulder was killed but I could find no evidence of the struggle.—VERDI BURTCH, *Branchport, N. Y.*

Western Red-tail (Buteo borealis calurus) in Arkansas.—On January 24, 1916, I secured from a young farmer an adult male specimen of this species, which he had caught in a steel trap set beside a dead hen which he had carried out into a field a few days before. The Hawk's stomach was empty. It is a very dark Red-tail, in fact I have always been under the impression that it might be referable to *Buteo borealis harlani*, but in sending it to the U. S. Biological Survey for verification, Dr. Harry C. Oberholser identified as a Western Red-tail. Its measurements are as follows: Length 20.25 in.; extent 48.50; wing 14.75; tail 8.50, inches. I take great pleasure, therefore, in adding another new bird to the state's list.—ALBERT LANO, *Fayetteville, Arkansas.*

The Rough-legged Hawk (Archibuteo lagopus sancti-johannis) at Capers' Island, S. C.—On January 18, 1927, while in company with Mr. Alexander Sprunt, Jr. I saw a very large Hawk flying over the ocean side of the beach of Capers' Island, which is strewn for four miles with dead trees due to the encroachment of the sea upon the island. This bird was in the melanistic phase with some whitish or grayish beneath and its flight strikingly resembled that of the Osprey. There was no mistake in the identification as the bird was not over 100 yards from us. Twenty-one years ago, in January, I saw one of these birds flying over the marsh side of Capers' Island which was in the brown plumage. When first seen late in the afternoon it at once occurred to me that I had seen the largest Marsh Hawk on earth, a moment later, however, I realized that it was none other than a Rough-legged Hawk. The flight of this bird was almost identical with that of the Osprey. This is an addition to the fauna of South Carolina. —ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

Gray Gyrfalcon in Aurora Twp., N. Y.—A Gyrfalcon was captured alive on December 27, 1926, in the township of Aurora, about fifteen miles south of Auburn, N. Y.

The bird was caught in a trap by its right leg but when found on the evening of the same day on which the trap had been set, was held by only two toes. It was found by Kenneth Chase and Charles Millard, both of Rochester, N. Y. and was kept in a box until brought to Rochester, on January 5.

At that time the toes on the foot which had been caught in the trap were stiff and black in color, while the talons on the same foot were light colored, in contrast to the black talons on the healthy foot. The bird limped badly, appeared listless and with eyes closed, and would not eat. The excrement was watery and greenish in color. That night, January 5, 1927, it died.

The bird has been identified by Prof. E. Howard Eaton as the Gray Gyrfalcon (*Falco rusticolus rusticolus*).

It is now being mounted by John Hill, 171 Brunswick Street, Rochester, N. Y.—Henry E. Wondergem, *100 Gibbs St., Rochester, N. Y.*

Gyrfalcon in Lancaster Co., Pennsylvania.—On January 7 there was brought to a Lancaster taxidermist an apparently mature female *Falco rusticolus gyrfalco* (or *rusticolus*) which had been killed at Manheim, Pa., about thirty miles north of the Maryland line. The farmer, Landis Witman, who shot the bird reported that it was bold to the point of fearlessness in its invasions of his barnyard, several times dashing upon Pigeons and Chickens which were near by. When he followed the bold Hawk he easily approached within firing range.

Fortunately, we saw the Gyrfalcon before it was skinned. Its length is 25 inches; wing, 17; wing spread, 57; and tail 10.75. Its back and wings are nearly solid lead gray the feathers being but slightly trimmed with grayish white. The entire head, neck and cheeks to the pale gray chin are solid dark lead gray, unstriped and unspotted. The breast is roughly striped with lead gray and white. The tail is abundantly barred with dark gray and light gray. Everywhere the bird is without any fuscous or brown tints. The ornamental features of plumage are the inner wing coverts which are bright-gray handsomely polka-dotted with white. In its solidly colored head and general color arrangement the bird is *Falco r. gyrfalco*; while in its absence of fuscous tints it resembles *Falco r. rusticolus*. At the suggestion of Dr. Witmer Stone the writer took the mounted Gyrfalcon to Philadelphia to compare it with the five specimens which are in the Academy of Natural Sciences. It was unlike any of the five in plumage characters.

Eight Goshawks and about that number of Snowy Owls are known to have been killed in Lancaster County this winter, but we scarcely expected that this extraordinary southward flight of the northern Raptores would include the Gyrfalcon.—Herbert H. Beck and H. Justin Roddy, *Franklin and Marshall College, Lancaster, Pa.*

The Destruction of Eagles.—No one can say with certainty at this date how far distant is the time when the Bald Eagle and its conspicuous nest in some tall pine will be no longer among the ornithological attractions to one taking the Inside Passage trip along the scenic coastline of southeastern Alaska. When I made a trip along those shores in 1898 the Bald Eagle or its nest were almost constantly in sight. I have seen twenty

of these birds at one time along a little stream running across a gravelly beach into the ocean, and so far as I could observe they were feeding only on dead or badly disabled salmon. But the desire of man to kill must be decimating their numbers with a greater rapidity, not only in Alaska but all over our country, than we are generally aware of.

It seems that the Eagle, together with all raptorial birds offers a target, especially to the boy hunter, that is irresistible, and to shoot an Eagle fulfils many a youth's hunting ambition.

The following appeared in the "Milwaukee Journal," of January 26, 1927:—

"Bounties of $1 each were paid by the Territorial Treasurer on 41,812 Eagles killed in Alaska since 1917."

The writer feels sure there are 41,812 bird lovers in the United States, who would be only too glad to give at least the dollar per head if those Alaskan Eagles could be brought to life and distributed over the country between the Canadian and Mexican boundary lines.

The Alaskans may have a fancied grievance against our national bird, but let every lover of that which typifies freedom protest against the destruction of that emblem.—W. E. Snyder, *Beaver Dam, Wis.*

The Barn Owl in Wisconsin.—In the January, 1925 'Auk,' Mr. A. W. Schorger of Madison, Wis., has an interesting record of the Barn Owl. The following additional records, all from Dodge County, may be of interest. Beaver Dam, near the center of the county, is approximately 40 miles northeast of Madison.

1. An adult female, taken on July 3, 1921, Burnett Township, No. 9511, had the belly bare and was then, or had recently been, incubating.
2. Adult male, No. 5714, Horicon, Oct. 10, 1904.
3. Adult male, No. 6282, Beaver Dam, Jan. 10, 1906.
4. Adult females, No. 7036, Minnesota Junction, July 23, 1908.
5. One taken at Fox Lake in the winter of 1894 by Geo. A. Morrison.
6. Adult female, No. 8156, Beaver Dam, Oct. 9, 1913.
7. W. R. Chatfield informs me he took one many years ago near Beaver Dam.—W. E. Snyder, *Beaver Dam, Wis.*

Hawk Owl at New Brunswick, N. J.—A Hawk Owl (*Surnia ulula caparoch*) was seen near New Brunswick, N. J. on the forenoon of December 19, 1926. The bird was seen several times flying over open fields between scattered groups of trees, and later was observed perched in a small tree alongside a cat-tail filled slough over which he made several short flights. There was ample opportunity for observation with 8 × glasses at about 150 feet; the long indistinctly barred tail, striking white spotting of the back, general light color of the top of the head, and the plain grey facial disc were noted. The under-parts were not seen. The field estimate as to length was 18 inches, which corresponds within the observer's limitations with that of the Hawk Owl. The observer was sufficiently familiar with the commoner large Owls, such as the Short-eared Owl, to be able to

exclude them. The manner of hunting corresponded exactly with that described by Eaton in his 'Birds of New York.'—S. C. Brooks, *Rutgers University, New Brunswick, N. J.*

Hawk Owl in Vermont.—Mr. Arthur H. Hardisty of Shelburne, Vt., writes me that he shot a Hawk Owl (*Surnia ulula caparoch*) on November 19, 1926. "It was apparently hunting along the roadside when killed and proved to be a male in perfect plumage. It contained a meadow mouse (*Microtus*)—Lewis O. Shelley, *East Westmoreland, N. H.*

The Carolina Paroquet in Western New York.—In tabulating recently, some data from notes made many years ago while residing in Buffalo, N. Y., I came across the subjoined item, which in some way had escaped my attention and remained unrecorded until now. While it is of historic value only, it will help round out the rather fragmentary knowledge of this little "parrot."

"Mr. David F. Day informed me to-night (Dec. 20th, 1889) that he once saw thirteen Carolina Paroquets light on the old City Buildings, Cor. of Franklin and Eagle Streets, and that he knew of a lot being captured at West Seneca (N. Y.) many years ago."

Mr. David F. Day was a practicing attorney in Buffalo; his avocation was botany and his knowledge of the flora of western New York was most profound, so much so that Gray drew heavily on it in preparing his 'Manual of Botany.' Mr. Day was also keenly interested in birds, knew most of the local species very well, though he did no special work in ornithology. My experiences with him in the field leads me to put full trust in his bird identifications, a trust I see no reason even at this late date, to question. —W. H. Bergtold, *Denver, Colo.*

Arctic Three-toed Woodpecker at Guelph, Ontario.—On November 20, 1926, within the city limits of Guelph, Ontario, my attention was directed by a loudly repeated bird-call which I immediately recognized as that of some species of Woodpecker I have never before heard. The bird approached in rapid, but deeply undulating flight, uttering its loud cry at each undulation, and alighted in typical woodpecker fashion on the bark of one of the larger branches of a white elm from 15 to 20 feet from the ground and not more than 20 yards from me. It clung there, head up, for about five minutes without moving its body; nor did it tap on the bark in search of insects. Once or twice it turned its head to one side to look behind, but seemed to be resting. I made a careful examination with the aid of 8 × prismatic binoculars, and its size, about that of a Hairy Woodpecker (*Dryobates villosus*), shining black upper parts and white under parts, proclaimed it a female Arctic Three-toed Woodpecker (*Picoides arcticus*). There was a north-westerly wind blowing, the temperature being slightly below freezing, and about an inch of snow lay on the ground. The bird had chosen as its resting place the south-easterly side of the tree and bough.

Mr. R. E. Barber of Guelph, an ornithologist who has been observing in this locality for many years, tells me he saw a female of the same species about the end of October, 1926, and that she remained almost motionless on the sunny side of the bark of a tree, but he did not note the direction of the wind. He had never seen the species before in this locality.—HENRY HOWITT, *Guelph, Ontario.*

Early Singing of the Horned Lark.—On January 10, 1927, I heard the first Horned Lark's song of this season. Later on the 23rd of January I heard it again. Both birds sang a number of times. Possibly it was the same one, as they sang in the same place, I have never heard this song so early in the year before. February 12th to the 28th is the usual time. Both of these songs were given on a mild sunny day following several days of stormy weather.—ADELE P. SCHROEDER, *White River, S. Dak.*

The Rusty Blackbird in Colorado.—On November 14, 1926, while on the South Platte River in company with two friends, in an area about eight miles south of Littleton, I saw four individuals of this species (*Euphagus carolinus*); they were busy *wading* in the shallow waters of an irrigating ditch apparently gathering food of some sort, and were very tame, so much so that we were able to approach within six feet of one bird, giving unexcelled opportunity to note color, color pattern, size, shape of bill, etc. There were three males in winter plumage and one female in the group.

This record adds another to the brief list of the occurrence of this Blackbird in Colorado, a list embracing about seven records, not counting one or two which have been questioned. It helps to substantiate the belief that the Rusty Blackbird occurs in Colorado only as a winter visitor, there being but one exception to this rule.—W. H. BERGTOLD, *Denver, Colo.*

Snow Buntings in the North Atlantic.—On October 7, 1926, when crossing from Liverpool to Montreal on the S.S. *Doric* I saw a party of about twenty Snow Buntings (*Plectrophenax nivalis*) flying close over the water. I first observed them about 10 A.M. on the starboard (northern) side of the ship and watched them for over a quarter of an hour. Our noon position was given as 53° 25′ N., 51° 50′ W. so that the point where the birds were seen is on a direct line from Cape Farewell, Greenland, to the coast of Newfoundland. The little party of birds kept coming close to the side of the ship, then gradually shearing away to the north-west then approaching the ship again. Each time during a quarter of an hour that they came alongside they were in almost exactly the same relative position so that their speed must have been just that of the ship, about 14.5 knots. Their behaviour suggested that they were flying from Greenland to Newfoundland when an unexpected cliff appeared directly on their course, flying out in a westerly direction for a short distance to avoid it they then resumed their true course only once again to meet with the same obstacle. this happened several times until they flew so far that on their next return the ship was no longer in their way.—W. B. ALEXANDER, *Croydon, England.*

Breeding of Macgillivray's Seaside Sparrow in South Carolina.—'The Auk' for July, 1924, pages 482–484 Mr. Alexander Sprunt, Jr., has given a lengthy account of the breeding of this bird (*Passerherbulus maritimus macgillivraii*), the birds Mr. Sprunt has assured me were identified by a well known ornithologist.

In May, 1924, I visited the same general region twice with Mr. Edward von S. Dingle and Dr. Charles P. Aimar, where I shot one bird, and watched at close range a large number, but I could not detect a single example of Macgillivray's among them and I have been familiar with the bird as far back as 1886. Mr. Sprunt and Mr. Dingle have collected a good series, all breeding birds, including a young bird just from the nest and able to fly, which was taken by Mr. Sprunt. All of these I have examined critically, but not one of the adults bears any resemblance to *macgillivraii*, nor does the young bird. These birds are identical in color and size with the Seaside Sparrows that were discovered breeding long years ago at Cabbage Island, Warsaw Sound, near Savannah, Georgia by Mr. Gilbert R. Rossignol, Jr., who sent me a large series of the birds as well as their nests and eggs. Again in 'The Auk' for October, 1926, pages 549–550 Mr. Sprunt has given the dates of the birds arrival as well as their departure from the breeding grounds. In my book, 'Birds of South Carolina,' published in 1910, I stated the following: "I have been unable to find this form breeding on our coast, yet it is possible that it does so, since the young in first plumage occur during the second week in July, and the adults in worn breeding plumage are to be seen during the third week in July. A distinct northward migration takes place about April 16 [or earlier], and continues until April 27, when all the birds have gone north, of course to their breeding grounds."

Mr. Sprunt says (Auk, Oct. 1926, pp. 549–550) that the Macgillivray's Sparrows [so-called] arrive on their breeding grounds about the middle of March and that eggs are laid as early as April 29. It will be clearly seen that when this bird is actually breeding Macgillivray's Seaside Sparrow is migrating within a hundred yards of my house!

A similar case is that of the Red-eyed Towhee which breeds only in the northern counties of South Carolina. When this bird arrives early in October it is of course in perfect winter plumage while its southern relative the White-eyed Towhee has just begun to moult its summer plumage and I could cite many other instances. I have a superb series of Macgillivray's Sparrows representing the fresh, unworn plumage as well as the worn, disreputable plumage, but it is always diagnostic as I well know. Some of the specimens are inky black and one has been to Cambridge, Mass., for examination five different times!

The birds that breed at Warsaw Sound have been referred to *macgillivraii* by many well known ornithologists, but unfortunately they are not and I do not concur with the opinions of those who have so stated. The only Macgillivray's I have seen that were really breeding are those that were taken by Dr. Louis B. Bishop at Pea Island, N. C. The fact of Mac-

gillivray's Seaside Sparrow breeding between *P. m. maritimus* to the north and another race which is closely similar to the northern bird on the south suggests to my mind that Macgillivray's Sparrow is a species, at any rate its breeding is indeed an anomaly.—ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

Swamp Sparrow in Western New York in Winter.—During the winter months I keep plenty of weed seeds scattered on the snow near my back porch and in January, 1925, about twenty Tree Sparrows and five Song Sparrows were feeding there regularly every day. The morning of February 1, they were joined by a Swamp Sparrow (*Melospiza georgiana*) and almost anytime during the next three days it could be seen there in the weed seeds or up on the porch picking up bits of raw peanuts that had been dropped by the Chickadees and Nuthatches from their feeding place on the porch. At night it roosted under the porch and was last seen February 4. I think that it became the victim of a cat that I found prowling around my back door the next morning.—VERDI BURTCH, *Branchport, N. Y.*

Nesting of the Prothonotary Warbler under a Porch.—Professor Butler's note in the October 'Auk' upon an odd nesting site of the Prothonotary Warbler brings to mind another instance of the same kind.

In June, 1910, in company with the late Frank Morley Woodruff, the writer visited the bottom lands of the Kankakee River near Kouts, Indiana. Here the Prothonotary was a common breeding species.

There were several weather beaten shacks along the river, evidently for the convenience of folks who like to fish. These were raised on posts so that the floors might be dry in seasons of high water. Beneath the verandah of one hung an empty lard pail, which, probably, had been in use as a minnow bucket. A dozen fish-hooks, more or less, were curved over the rim of the pail and so were suspended all around it. In this receptacle, filled with nesting material nearly to the top, one could see, through a crack in the verandah floor, a brooding female Prothonotary. One's eye, applied to the crack, held the bird within a six-inch range.

This nest, after the brood had flown, was secured by Mr. Woodruff and placed in the collection of the Chicago Academy of Sciences.—EDW. R. FORD, *Grand Rapids, Mich.*

The Bay-breasted Warbler in the Adirondacks of N. Y.—In 'The Auk' for January, 1927 (p. 111,) is a note by Jay A. Weber on the breeding of the Bay-breasted Warbler (*Dendroica castanea*) in the vicinity of North Hudson, N. Y. As supporting evidence that this Warbler may be a regular though apparently not common summer resident and breeder in the Adirondacks, I may report that on July 14, 1924, at Pillsbury Lake, which is about 11 miles northwest of Speculator, southern Hamilton County, I found the species in full song and shot a specimen in order to verify the identification. Again in July, 1925, I recorded the species as present at Grampus Lake, about six miles west of Long Lake village,

northern Hamilton County.—CHARLES E. JOHNSON, *Roosevelt Wild Life Station, N. Y. State College of Forestry, Syracuse, N. Y.*

The Catbird (Dumetella carolinensis) at Washington, D. C. in Winter.—While I was approaching the Harvard Street Entrance of the National Zoological Park on December 30, 1924, I was astonished to hear the mewing of a Catbird. Further investigation showed the bird to be feeding on the berries of a honeysuckle vine. I saw this bird again in the same place January 6, 1925. This was rather remarkable, since there was four or five inches of snow on the ground. The previous records are: December 6, 1917 (B. H. Swales); December 25–31, 1883 (H. W. Henshaw); January 1, 1921 (L. D. Miner).—WILLIAM HOWARD BALL, *1233 Irving St., N. W., Washington, D. C.*

Late Nesting of Golden-crowned Kinglet.—On Aug. 30, 1926, I noted a very unusual thing in this part of the country at least, a nest of the Golden Crown Kinglet (*Regulus satrapa*) with four young. One week later I returned to the nest and found that they had all left. To me this is quite a late nesting for this bird.—A. R. MCCRIMMON, *Montrose, Colo.*

Records from the Coast of Maryland.—From August 12 to 14, and December 3 to 5, 1926, I visited Ocean City, Maryland, to examine the bird-life of the vicinity and to find, if possible, certain coastal forms that, from geographic range, were expected to occur in that vicinity, but that had not been recorded definitely from the state. On the second trip I was accompanied by Mr. E. A. Preble. Following are important records.

Alca torda.—On December 4, Mr. Preble and I saw a Razor-billed Auk two miles south of Ocean City in the wash of the waves where it was attempting to come ashore. We supposed that the bird was sick or injured. After watching it for a brief space I walked up to capture it and was astonished to see it rise and fly a short distance and then drop back again into the water. Unfortunately I did not succeed in taking it as there seems to be no definite record of the species for Maryland, though it has been collected a short distance farther south in Virginia. There was no question as to the identity of the bird as we were both within a very short distance of it and observed it for some time after it had again taken to the water.

Melospiza melodia atlantica.—Since the description of the Coast Song Sparrow by Mr. Todd[1] it has appeared to me certain that the Song Sparrow of the coast of Maryland must be this form, and I was therefore gratified on August 13 and 14 to find it fairly common as a breeding bird amid the bayberries and baccharis bordering the salt marshes back of the beach at Ocean City. Apparently this form may be sedentary since Mr. Preble and I found it during our visit in December. In addition to the grayer, less rufescent coloration, pointed but in the original description, the bill of

[1] *Melospiza melodia atlantica* Todd, Auk, 1924, p. 147. (Smith's Island, Virginia.)

the Coast Song Sparrow, viewed from the side, appears distinctly larger and heavier than that of *M. m. melodia*. The exact range of this form, which has not previously been reported from Maryland, is still to be ascertained. It is probable that it is confined entirely to the outer coast line.

Chondestes grammacus grammacus.—On August 13, while crossing through a dense growth of bay-berries near the inlet I was astonished to have a Lark Sparrow fly out before me and alight on a low bush. This bird, which I collected, proved to be an immature individual fully grown. Eifrig[1] has reported this species in July, 1901, in the highlands of western Maryland between Accident and Cove, where the birds were common and were breeding. He collected a specimen July 24, 1901. The bird taken at Ocean City is in a region so far distant from the normal breeding haunt of the species that it seems logical to suppose that it was a wind blown vagrant from some more distant region, possibly a survivor of the recent tremendous gale that had swept out of the Gulf of Mexico and up the east coast leaving various waifs in the form of southern birds in its wake. My specimen appears to be the second taken in the State.

Passerculus princeps.—As the Ipswich Sparrow has been reported common in winter as far south as Pea and Bodie Islands, North Carolina,[2] it was to be expected on the coast of Maryland, and was one of the objectives of our December excursion. It was therefore with delight on December 3, almost as soon as we began our observations a short distance north of town, that we saw two of these birds in an open space among the dunes. Others were encountered on the following day near the inlet, until nine in all were recorded, so that the species seemed to be fairly common. Specimens were taken.

With a specimen definitely in hand I feel at liberty to announce a sight record for the Ipswich Sparrow made several years ago in a locality out of the regular habitat of the species. On March 24, 1920, near Hardge and Basts' oyster wharf on West River, south of Annapolis, Maryland, I saw one of these birds in a growth of weeds near water in company with other Sparrows. I watched it for some time but had no means of collecting it. The region was far from the normal home of this Sparrow so that the bird must be regarded as a stray.—ALEXANDER WETMORE, *U. S. National Museum*.

Notes from Washington, D. C.

Sterna hirundo. COMMON TERN.—I saw fifteen on May 25, 1926 over the Potomac River near Columbia Island, D. C. and again on May 26. A small flock was seen at Alexander Island, Va., on May 27 and 31.

Hydrochelidon nigra surinamensis. BLACK TERN.—A small flock was seen at Alexander Island by Mrs. T. M. Knappen and the writer. I saw seventeen at Marshall Hall, Md. on July 22.

[1] Auk, 1902, p. 84.

[2] Pearson, Brimley, and Brimley, Birds of North Carolina. North Carolina Geol. and Econ. Surv., vol. 4, 1919, p. 235.

Casmerodius egretta. AMERICAN EGRET.—One seen May 27 at Alexander Island by Mrs. T. M. Knappen and myself. This is the second spring record.

Hydranassa tricolor ruficollis. LOUISIANA HERON.—M. T. Donoho, F. C. Ruppert and the writer saw two at Alexander Island on August 30, 1926. They were again seen on August 31 by Mr. and Mrs. L. D. Miner and myself. Two were seen at Four Mile Run, Va. on September 21, 1926 by Miss K. H. Stuart, the Miners and myself.

Nyctanassa violacea. YELLOW-CROWNED NIGHT HERON.—A single bird was seen on May 30, 1926 by C. R. Shoemaker, Mr. and Mrs. L. D. Miner, Mr. and Mrs. Edmund Platt, Mrs. C. A. Aspinwall, M. T. Donoho, F. C. Ruppert and the writer. The previous record was made August 1901. It was seen during July and August by numerous other observers.

Rallus elegans. KING RAIL.—Mr. M. T. Donoho and the writer first saw this bird at Alexander Island June 22. It has been seen infrequently since then by others.

Gallinula galeata. FLORIDA GALLINULE.—A pair of these were first seen by Miss K. H. Stuart on June 20 at Alexander Island. The writer and others noted it June 22, and September 21, 1926 at Four Mile Run, Va., where two young were seen. This bird was present during the whole summer.

Micropalama himantopus. STILT SANDPIPER.—F. C. Ruppert and myself saw one on Columbia Island, June 3, 1926.

Tringa canutus. KNOT.—On May 26, 1926 on a small mud-flat near Columbia Island, D. C., I saw this bird and pointed it out to the others which included Mr. and Mrs. L. D. Miner, Mr. Edmund Platt, Mr. C. R. Shoemaker, Mrs. C. A. Aspinwall, C. M. Williams, and F. C. Ruppert. We examined the records and discovered that we had added a new bird to the local avifauna. Dr. Paul Bartsch and the writer attempted to collect it on May 28 but were unsuccessful. Mrs. T. M. Knappen, M. T. Donoho, C. M. Williams, and myself saw it on May 29. I last saw it on June 3.

Pisobia maculata. PECTORAL SANDPIPER.—I saw one June 8 on Columbia Island and again June 9 and 11.

Pisobia fuscicollis. WHITE-RUMPED SANDPIPER.—I first saw these on May 25 at Columbia Island and were present until June 14. I saw a flock of thirteen on June 11.

Pisobia minutilla. LEAST SANDPIPER.—These were present on Columbia Island from May 25 until June 14.

Pelidna alpina sakhalina. RED-BACKED SANDPIPER.—I saw one May 25 and three May 26 and May 27 on Columbia Island.

Ereunetes pusillus. SEMIPALMATED SANDPIPER.—These were in company with the Least Sandpiper May 25–June 14.

Calidris leucophaea. SANDERLING.—One was seen by F. C. Ruppert and the writer on May 31 at Columbia Island.

Catoptrophorus s. semipalmatus. WILLET.—One was first seen by Mr

M. T. Donoho on June 9 at Columbia Island and also by Mr. and Mrs. L. D. Miner, Miss K. H. Stuart, Mrs. T. M. Knappen and myself. It was also seen on June 11.

Aegialitis semipalmata. SEMIPALMATED PLOVER.—Large flocks of these were present on Columbia Island from May 25 until June 19.

Arenaria interpres morinella. RUDDY TURNSTONE.—A flock of eight was seen on Columbia Island June 3 by F. C. Ruppert and the writer.

Melospiza lincolni lincolni. LINCOLN'S SPARROW.—One was seen at Chevy Chase Lake, Md., on May 13, 1926, by Mr. M. T. Donoho and the writer.

Protonotaria citrea. PROTHONOTARY WARBLER.—A pair of these birds was seen at Dyke, Va. during the early summer by the writer and others, but the nest was not found.

Dendroica cerulea. CERULEAN WARBLER.—A male was seen by F. C. Ruppert and myself at Piney Branch, Rock Creek Park, D. C. on May 4, 1926.—WILLIAM HOWARD BALL, *1233 Irving St., N. W. Washington, D. C.*

Notes from Northwestern Michigan.—

Bartramia longicauda. UPLAND PLOVER.—One bird, July 24, 1926 on the sandy plains northwest of Little Lake, Marquette County.

Hesperiphona vespertina vespertina. EVENING GROSBEAK.—A pair July 24, 1926, at Carlshend, Marquette County. Time did not permit a search for the nest although the considerable area of old growth forest of maple, birch, basswood and hemlock in the vicinity suggests the possibility that they nested nearby.

Spizella pallida. CLAY-COLORED SRARROW.—Several birds seen and the characteristic rasping song heard regularly, July 27, 28, and 29, 1926 in the sandy country in and surrounding the Shaky Lake County Park, in southwestern Menominee County.

Spizella pusilla pusilla. FIELD SPARROW.—Several individuals were noted in song, July 27, 28, 29, 30, 1926 in southwestern Menominee County in the same habitat with the Clay-colored Sparrows.—JOSEPH KITTREDGE, JR., *St. Paul, Minnesota.*

Notes on Some Uncommon Birds in the Chicago Region.—The Field Museum of Natural History has recently acquired the collection of Mr. J. Grafton Parker, Jr., which contains a number of specimens not previously reported upon that are worthy of record.

1. *Larus pipixcan.* FRANKLIN'S GULL.—An adult female taken at Liverpool, Lake Co., Ind., May 3, 1898. Mr. Amos W. Butler writes me, "So far as I recall no one mentions a specimen preserved from Indiana."

2. *Nettion carolinense.* GREEN-WINGED TEAL.—Female taken at Liverpool, Oct. 18, 1895.

3. *Steganopus tricolor.*—WILSON'S PHALAROPE.—Male from Wolf Lake, Cook Co., Ills., May 21, 1893, and a pair from South Chicago, Cook Co., May 30, 1894.

4. *Limnodromus g. griseus.* DOWITCHER.—Young female from Miller, Lake Co., Ind., Aug. 24 (no year).

5. *Micropalama himantopus.* STILT SANDPIPER.—Female from Hyde Park, Chicago, July 26, 1893, and an unsexed bird from the same place, Aug. 7, 1893. Both these specimens were recorded by Woodruff (Birds of Chicago Area, p. 67), but the data given by him do not correspond to those on the labels.

6. *Pisobia bairdi.* BAIRD'S SANDPIPER.—A male from Miller, Ind., Aug. 24, 1896.

7. *Catoptrophorus s. inornatus.* WESTERN WILLET.—Male from Miller, Aug. 14, 1898.

8. *Ectopistes migratorius.* PASSENGER PIGEON.—Female (marked male) from Delton, Wis., July 12, 1886, and an immature bird from Grand Crossing, Cook Co., Ills., Aug. 21, 1886.

9. *Phloeotomus p. abieticola.* NORTHERN PILEATED WOODPECKER—An adult male taken at Kouts, Porter Co., Ind., Dec. 5, 1894.

10. *Nuttallornis b. borealis.* OLIVE-SIDED FLYCATCHER.—Female from Wolf Lake, Ills., May 23, 1896.

11. *Xanthocephalus xanthocephalus.* YELLOW-HEADED BLACKBIRD.—Male from Grand Crossing, May 9, 1888, and a female from Hyde Park, July 16, 1896.

12. *Icterus spurius.* ORCHARD ORIOLE.—Female taken May 15, 1886 at Grand Crossing.

13. *Pinicola enucleator leucura.* PINE GROSBEAK.—Female taken in Chicago in 1869.

14. *Loxia curvirostra minor.* AMERICAN CROSSBILL.—Female from Lake Forest, Lake Co., Ills., Oct. 29, 1895, and a male Nov. 2, 1895, from the same place.

15. *Calcarius pictus.* SMITH'S LONGSPUR.—Five males and a female from Worth, Cook Co., Ills., April 27, 1893.

16. *Melospiza l. lincolni.* LINCOLN'S SPARROW.—A male from Grand Crossing, Mar. 11, 1883. Very early for this species.

17. *Stelgidopteryx serripennis.* ROUGH-WINGED SWALLOW.—One taken May 3, 1893, at Worth.

18. *Bombycilla garrula.* BOHEMIAN WAXWING.—One male, three females, and an immature from Miller, Dec. 26, 1898.

19. *Protonotaria citrea.* PROTHONOTARY WARBLER.—A number taken at Kouts, Ind., in June 1895 and May 1896.

20. *Dendroica cerulea.* CERULEAN WARBLER.—A female and one juvenal specimen from Kouts, June 29, 1895.

21. *Dendroica v. vigorsi.* PINE WARBLER.—A female from Calumet Heights, Ind., July 10, 1900.

22. *Penthestes c. carolinensis.* CAROLINA CHICKADEE.—Male taken at Lake Forest, Dec. 25, 1890. Also reported by Woodruff (loc. cit., 189), but the year not given. Second record for northern Illinois.—PIERCE BRODKORB, *Evanston, Illinois.*

Notes from Madison, Wisconsin.—*Micropalama himantopus.* STILT SANDPIPER.—During the summer of 1926, the water level of a pond near Madison was lowered greatly by pumping of the water to wash gravel. The shores under normal conditions are largely gravel, but the pumping exposed stretches of mud which attracted shorebirds in unusual numbers. On August 7, I found eight Stilt Sandpipers intermingled with Yellow-legs, Least Sandpipers, and Semipalmated Sandpipers. There was no cover, but after exercising much patience, I collected three specimens, two males and a female. The following morning, when a male was collected, only two of this species were found. On August 14, there were two on the pond and a male was taken. The sixth specimen was a female with an injured tarsus, taken on August 25. Mr. John Main secured a lone bird on the same pond on September 12.

This species appears to be a rare migrant. The statement of Kumlien and Hollister in 'The Birds of Wisconsin' (1903), that young barely able to fly had been run down at Lake Koshkonong, must be taken as an unfortunate error. Since the above date, only one specimen has been recorded. Stoddard took a male in Sheboygan County, August 13, 1921, and remarks (The Auk, 40, 1923, 321) that this is the only one that he has observed on the Lake Michigan beaches.

The best account of the habits of this species in migration is given by Allen (The Auk, 30, 1913, 430). My observations differ in some respects, perhaps due to more limited opportunities for observation. When first seen, the birds were scattered about among members of other species, each bird feeding methodically in a circumscribed area. They dabbled in water reaching to the belly and frequently thrust under the head and neck "to the hilt." Bartsch The Auk, 39, 1922, 106 states that this is the only species of Sandpiper that he has encountered which systematically feeds by ducking. The Long-billed Dowitcher, to which the Stilt Sandpiper is closely related, is confirmed in this habit. I have also frequently observed submergence of the head by Yellow-legs, Least Sandpiper, and Pectoral Sandpiper. One Stilt Sandpiper having encroached on the domain of another in shallow water, the birds squatted and with outstretched necks rigidly faced each other. The intruder finally decamped, stared out of countenance. I have observed Yellow-legs assume the tourney pose, then spring into the air like roosters in heroic combat.

A bird having fed to satiety, drew up a leg and rested with the head between the shoulders. On my first shot, the mixed flock of shorebirds alighted but 300 feet distant. The Stilt Sandpipers did not segregate and were the first to dismiss suspicion.

It is not easy to distinguish the Stilt Sandpiper from the Yellow-legs in flight, but I see no reason for confusion when the birds are feeding. The former is the more deliberate in its movements, its neck appears shorter, and it does not jerk its superstructure as does the Yellow-legs. The white line over the eye, and in most cases a rusty spot behind the eye, were prominent field marks. Incongruous as it may seem, the rusty spots were much more conspicuous in the field than in the hand.

Pisobia bairdi.—BAIRD'S SANDPIPER.—This species was observed on several occasions in August at the above pond. I took a female on August 15, and another female on August 27.

Limnodromus griseus scolopaceus. LONG-BILLED DOWITCHER.—My only fall record is a male taken August 12, 1926.

Sphyrapicus varius varius.—YELLOW-BELLIED SAPSUCKER.—Rare winter resident. A female taken December 25, 1926, is of further interest in that it represents the form with a black crown. The latter had sagittate markings of ecru drab.

Astur atricapillus atricapillus. GOSHAWK.—On the morning of January 1, 1927, near the run in the Wingra woods, a fine adult Goshawk approached me and passed within 50 feet without paying the slightest heed to my presence. The Hawk's passage aroused cries of protest from a Song Sparrow that otherwise would have escaped observation.—A. W. SCHORGER, *2021 Kendall Avenue, Madison, Wisconsin.*

Three New Birds for Kansas.—While working under the supervision of Mr. C. D. Bunker at the Kansas University Museum the following important records have come to my attention. All of the specimens reported here are now in the Kansas University Museum bird collection.

Pelecanus occidentalis. BROWN PELICAN.—A single specimen of this species was found dead after a severe storm June 6, 1916 near Parker, Linn County, Kansas.

Callipepla squamata pallida. ARIZONA SCALED QUAIL.—I collected three specimens of this species from a flock of six about fourteen miles north of Elkhart, Morton County, Kansas, on August 19, 1926. They were beneath some low shrubbery at the foot of a cliff and did not flush until I had approached to within about fifteen feet of them. These three specimens are to my knowledge the only ones taken in the State.

Geococcyx californianus. ROAD-RUNNER.—A fine male specimen of this species was killed three miles west and seven miles north of Caldwell, Sumner County, Kansas, September 30, 1926. This species has been reported as occurring occasionally in the extreme southwest part of the state, but as far as I know there have been no specimens taken to make the report authentic. The occurrence of a Road-runner as far north and east as Caldwell, Kansas is unusual and unless absolutely accidental it would indicate that the species was extending its range in that direction.—W. H. BURT, *Kansas University Museum, Lawrence, Kas.*

The Role of the Snake Skin.—It would seem that before an explanation of a phenomenon is in order it is desirable to make sure that there is something requiring explanation.

In this country at least it appears to be reasonably sure that the recurrent speculation as to why certain birds use the exuviae of snakes, is due to the fact that the Great-crested Flycatchers (*Myiarchus crinitus*) use this material on occasion not only in nest construction but as seeming "scarecrows" dangling from the openings to their nests or prominently employed

in nest construction. Had the use of sloughs by this species been confined to the use of fragments in general construction, no especial problem in connection therewith would have arisen. The "mystery" arises because of the fact that entire sloughs or large pieces are either left hanging from the nesting holes or are conspicuously placed along the rim of the nests.

Since many species of birds have their young and eggs destroyed by snakes, and since old birds at nesting time are greatly concerned when a snake is seen near their nests, as I have often observed to be the case, it seems obvious that if such species, and presumably the Great-crest does not escape their depredations, in seeking nesting material recognized snakes' sloughs as sufficiently snake-like to act as scare-crows to other birds, or other animals, they would themselves be too much alarmed on discovering the sloughs to use them in nest building. Hence two corollaries appear to be justified: (1) that since birds gather snakes' sloughs, they do not associate the flimsy, lifeless material with their former wearers; and (2) that they themselves, not recognizing that sloughs resemble snakes, do not employ them in nest building as scare-crows, but in the same manner that birds occasionally use fragments of birch bark, leaves, strings, newspaper, etc., as nesting material.

Sloughs are conspicuous objects as seen from the trees and no doubt their availability as nesting material is investigated by many species of birds, but it is only the larger species that are able to utilize entire specimens, especially from our larger species such as the black snake, on account of the difficulty of carrying them to their nests and their manipulation afterwards.

If, in the process of nest construction, the casts be built into the structure inconspicuously, they would have little of the alarming aspects often attributed to them. If, however, birds happen to place the slough along the upper edge of the nest where it is likely to be easily displaced and consequently subject to frequent rearrangement by the sitting bird, as chronicled by Bolles,[1] it becomes a prominent object and consequently has given rise to a theory involving the matter of *purpose* in its use other than as nesting material, notably "to scare away intruders," as was suggested by him. This theory, however, fails to account for the fact that *crinitus* and four of its races, as well as birds of other genera, are not themselves frightened when they come across snakes' sloughs, but instead they collect them even as they collect other nesting material, and *crinitus* often includes also, as stated by Coues, a great variety of other objects, "trash of the most miscellaneous description, sometimes accumulated in astonishing bulk."—CHARLES L. WHITTLE, *Boston, Mass.*

Snakes' Sloughs as Nesting Material.—The Western House Wren (*Troglodytes aedon parkmani*) may be added to the list of birds mentioned

[1] "Snake Skins in the Nests of Myiarchus crinitus," The Auk, 1890, p. 288.

by Mr. John K. Strecker in his article in 'The Auk' of October, 1926, "On the Use, by Birds, of Snakes' Slough as Nesting Material."

On May 31, 1921 in the Missouri River bottom near Kansas City, Missouri, Mr. Harry Harris discovered a nest of the Western House Wren in a cavity in a dead willow, six feet from the ground, made of twigs and in his notes remarks: "The lining of this nest was different from most Wrens' nests I have examined; it consisted almost entirely of a small cast snake skin." The next day he discovered another nest "lined with several pieces of cast snake skin."

During the nesting seasons of 1922, 1923 and 1924 Mr. Harry Harris and I gave particular attention to Wrens' nests in this locality and noticed that the majority of them contained snakes' sloughs in the linings of the nests. From Mr. Harris's notes on 23 nests examined, snakes' sloughs were found in 13 of them. From my own data on 7 nests, I noted finding snakes' sloughs in the linings of 6 of them. Of the total of 30 nests examined by us in those years 19 contained cast snake skins. This is approximately 63% of the nests examined. The amount of snake skin used varied from a nearly complete lining of the nest to a few fragments of snake skin in a lining of feathers; but in all cases it was used in the lining only.

The nests were all located in a deep stand of willows in the Missouri River bottom near Kansas City, Missouri. The many dead willow stubs furnished suitable nesting cavities in this place; food and snakes' sloughs were easily obtained and the Wrens were abundant.

I do not mean to say that the majority of the nests of Western House Wrens contain snakes' slough in the lining of the nest, but such was the case in this particular locality under these conditions.—Dix Teachenor, *Kansas City, Mo.*

On the Usage of Snake Exuviae as Nesting Material.—Mr. John S. Strecker in his article "On the Use, by Birds, of Snakes' Sloughs as Nesting Material" (Auk, XLIII, 1926, pp. 501–7) names several species which use snake skins as nesting material. He closes, however, without explaining this "bizarre peculiarity" as he justly calls it. In compliance with his closing request, I hope, by some observations made in 1925, to throw some new light upon the subject.

From my general observations another species can be added to Mr. Strecker's list, i.e., *Passerina cyanea cyanea* (Indigo Bunting.) I have collected during various seasons and in different localities several nests of this species composed partially of snake skin. None of these were lined with snake skin, but all had it combined in the lower portion of the nest, or woven in the sides and brim. One nest collected July 23, 1923, has the entire lower portion composed of snake skin. There are long strips of skins streaming from the bottom of the nest.

On June 12, 1925 my little niece found a nest in an old Martin box hung on the garden fence. I examined the box and found a set of five eggs of *Myiarchus crinitus crinitus* (Crested Flycatcher). On examining the nest

I found that it was composed of hog hair, grass, feathers, and six strips of transparent celluloid in addition to many smaller pieces of the same material. The strips of celluloid were from one-half to three inches in width and from five to six and one-half inches in length. In the same box just previously I had found a nest of *Thryothorus l. ludovicianus* (Carolina Wren) which did not contain any of the celluloid.

Transparent celluloid resembles snakeskin very much except in odor. Celluloid has a slight odor, especially noticeable when heated, whereas snake skins do not. I examined fifty snake exuviae and failed to detect any odor whether the skins were cold or heated.

Birds as a rule are attracted to shining objects and deport these objects whenever possible, as in the case of the common pet Crow. I have observed *Pici* (Woodpeckers), *Baeolophus b. bicolor* (Tufted Titmouse) and *Penthestes c. carolinensis* (Carolina Chickadee) investigating pieces of bright metal or glass hung in the sun.

Herein lies a possible explanation of birds' usage of snake skins. My experiment leads to the assumption that it is not because they have an offensive odor that would protect the nest, for snakeskins have none, but because birds are naturally attracted to shining objects.

Crested Flycatchers are very inquisitive birds, as most any oölogist has observed. If, then, birds act in accordance with neural impulses, why should this species, high in the plane of avian evolution, err so in mistaking celluloids for snake skin? If the odor theory were correct, the difference between the odors of snake skin and celluloid would certainly be perceptible if the avian olfactory nerves were sensible to either.

A possible experiment on this line which I have not been able, thus far, to conduct, would be to determine whether there is any choice between celluloid, or other shiny material with more or less odor, and snake skin when both are readily accessible. The relative attractiveness of shiny objects for different species should also be a stimulating and fruitful field for research.

Though I realize that a decision cannot be made scientifically on one case of behavior, yet I believe that the theory that birds use snake skin as a nesting material because of its shiny, attractive appearance is more logical than the theory of offensive odor. I hope at least, that my observations may open new channels of thought on this peculiar avian habit that may lead to more exhaustive research.—JAMES SUTHARD, *5515 Kimbark Ave., Chicago, Ill.*

Birds and Motor Cars.—In connection with reports on the killing of birds by motor cars, particularly in the West, I took note when driving some twenty-five hundred miles, on highways and back roads in New Hampshire, June 21 to July 21, 1926, and noted the crushed bodies of only two birds.

The speed of flight of a few birds, as noted from my speedometer, may be worth adding to our rather meagre records; it is rarely that the three

necessary factors coincide: courses parallel, duration adequate, speed of car unvarying. Northern Flicker, rate twenty-five miles per hour; Baltimore Oriole, twenty-six; Bronzed Grackle, twenty-seven; Song Sparrow, seventeen; four Robins, respectively twenty-two, twenty-five, twenty-seven, thirty-two.—F. B. WHITE, *Concord, N. H.*

In re a Colorado Collector.—There is, so far as I can learn, but one record of the occurrence of the Black Rail (*C. jamaicensis*) in Colorado, a record made on the authority of David Bruce, and published in the First Supplement to Cooke's 'List of Colorado Birds'.

Future workers in Colorado ornithology may wish to compile data relative to the early collectors of birds in this State. To facilitate the collection of such data the following quotation from the late Carl E. Akeley's 'In Brightest Africa' (p. 2) is given below:—

"There was at that time in the neighboring town of Brockport (N. Y.) an Englishman named David Bruce, whose hobby was taxidermy. By calling he was a painter and interior decorator—a very skillful craftsman, who did special work far and wide through the country. As a recreation he mounted birds and animals for sportsmen. His office was filled with birds in cases, and he was surrounded with other evidences of his hobby."
—W. H. BERGTOLD, *Denver, Colo.*

RECENT LITERATURE.

Another Edition of Beebe's 'Pheasants.' The original edition of William Beebe's 'Monograph of the Pheasants' was limited to 600 copies and as these approached exhaustion Col. Anthony R. Kuser, to whose generosity the publication was largely due, decided to bring out another smaller edition which would maintain the main features of the original work and yet, with a reasonable reduction in illustration, could be placed within the reach of many who were unable to purchase the larger, more expensive volumes.

This has been admirably accomplished in the two volumes[1] before us which preserve all the text except certain technical portions and most of the plates, although it has been possible to present only 31 of them in color, and also a few of the photographs of habitats.

The text has been rewritten in some places and additional matter, acquired since the appearance of the original edition, has been added. Everything essential to the life histories of these interesting birds has therefore been presented in the present work. The text is beautifully printed on heavy paper, while the reproduction of the colored plates by a quadricolor process is exceedingly accurate and the results very pleasing.

Both Mr. Beebe and Mr. Kuser are to be congratulated upon this admirable publication which will make the natural history of the Pheasants familiar to a far greater number of persons than could be reached by the original edition and many will be led to consult the original volumes which, as Dr. Osborne states in his preface, can now be seen in most of the large libraries, museums and universities of the country.—W. S.

Danforth's 'Birds of Cartagena Lagoon, Porto Rico.'[2]—The present contribution seems to be the first in which modern methods of ecological investigation have been applied to a limited area in the West Indies, and the avifauna studied carefully in its relation to definitely restricted associations of plant life and other factors. The author has selected Cartagena Lagoon in the coastal plain of southwestern Porto Rico, near the town of Lajas, as typical of the lagoon areas of the island, and has studied its life over a space of twenty months. During this period 105 forms of birds were recorded from this limited area, a remarkable list when

[1] Pheasants their Lives and Homes. By William Beebe. In two volumes. Published under the auspices of the New York Zoological Society by Doubleday, Page & Company, Garden City, New York. 1926. Volume I, pp. i–xxiv + 1–257, pls. I–XXXIV (15 in color, 11 plain and 8 from photographs), one map. Volume II, pp. i–xv + 1–309, pls. XXXV–LXIV (16 in color, 6 plain, and 8 from photographs). Price of the two volumes. $15.00.

[2] Birds of the Cartagena Lagoon, Porto Rico. By Stuart T. Danforth. Journ. Dept. Agric. Porto Rico, vol. X, no. 1, Jan., 1926, pp. i–x, 1–136, 1 map, 45 figs., published Dec., 1926.

it is considered that in 1916 the reviewer listed only 162 forms for the whole of Porto Rico, including the outlying islands of Mona, Desecheo, Vieques and Culebra. Of the forms given by Mr. Danforth 42 are migrants from North America and 42 breed regularly or occasionally at the lagoon. Others come to the lagoon area to search for food or are found in its vicinity casually. The author divides his area into nine distinct plant associations, each with its characteristic forms of other life. Bird life is common and reasonably varied when the total bird list is considered, since daily lists included from 26 to 48 forms.

The annotated list that forms the greater part of the paper includes under each species a statement as to the ecological preferences, habits, and abundance, and for many a detailed statement of the food, obtained from examination by the per cent by bulk method of the stomach contents of birds taken for specimens. Certain records new to Porto Rico that have already appeared in the 'Auk' (for 1925, pp. 558–563) are here given in more detail. On the supposition that the Willet of Porto Rico may represent a distinct form, "if such proves to be the case," there is provided for it the name *Catoptrophorus semipalmatus longicaudus* (p. 76). The proposed form, based on two specimens, from the measurements given appears to have the general size of typical *semipalmatus* but has the tail seven millimeters longer than the maximum given for that form. Under modern methods in systematic ornithology it is undesirable to name forms "provisionally" since such action usually throws the work of proof on others and can only cause trouble. Unless there is certainty in the matter, it is better to call attention to supposed differences and then let the matter rest until further study proves or disproves the assertion.

The paper is especially valuable for its detailed observations on birds of aquatic habit. The naturalist from elsewhere, resident for a brief space in the West Indies, or for that matter anywhere in the Tropics, is ordinarily so attracted by species peculiar to the region in which he is working that usually he gives somewhat casual attention to forms of wider range. The present account adds notably to knowledge in this latter respect. It is to be hoped that the author, who is again in Porto Rico, may continue his contributions on the interesting avifauna of that American possession. —A. W.

Catalogue of the Ayer Ornithological Library.—In two stout volumes,[1] Mr. John T. Zimmer, assistant curator of birds in the Field Museum of Natural History, has presented a detailed catalogue of the Edward E. Ayer Ornithological Library which includes most of the bird books in the Museum. Mr. Ayer one of the founders of the Museum and

[1] Catalogue of the Edward E. Ayer Ornithological Library. Part I [II] By John Todd Zimmer, Assistant Curator of Birds. Wilfred H. Osgood, Curator, Department of Zoology, Editor. Field Museum of Natural History. Publication 239 [240]. Zoological Series Vol. XVI. Chicago, U. S. A., November, 1926. Vol. I, pp. i–x + 1–364. Vol. II, pp. 365–706.

the first chairman of the Board of Trustees has also been a generous patron of the institution, especially in connection with the ethnology of the North American Indians and with the library. He is also the donor of the famous Ayer collection of Americana in the Newberry Library of Chicago.

His interest in bird books arose from his love of hunting and his library began with the handsome illustrated folios for which ornithology is famous. Later the less conspicuous but none the less valuable volumes were obtained until the collection has become remarkably complete. It was presented to the Museum in 1893 and has been added to by the donor ever since.

The catalogue contains in the main only such works as were published under a separate title, and excerpts, reports, bulletins, etc., are usually omitted, many of these however are to be found in the ornithological journals which are listed in an appendix. The catalogue has been prepared with great care and not only are the titles quoted in detail and verbatim, but much important information, both historic and scientific, is added in editorial notes which are particularly full in the case of rare brochures and little known reprints. There is an historic preface by Dr. W. H. Osgood, and a colored portrait of Mr. Ayer while numerous photographic reproductions of the title pages, etc., of rare works, constitute interesting illustrations.

Mr. Ayer deserves the gratitude of ornithologists in bringing together such a magnificent collection of ornithological works at Chicago, most of which could not formerly have been consulted without a trip to one of the eastern libraries, while Mr. Zimmer is to be congratulated upon the completion of a painstaking piece of work in a most creditable manner.

Mr. Zimmer has very properly adhered strictly to the plan adopted and to the rules of bibliography and we have no criticism to offer, but the ornithologist who does not happen to be a bibliographer will be astonished to find but one publication described under Cassin, one under Merriam, two under Allen and none at all under Oberholser, Richmond, Riley, Bangs, etc. In a few cases statements might have been modified to advantage as in that of Gentry's 'Life Histories' where we do not think our compiler would have stated that it was "chiefly valuable for its notes on food habits" had he read McAtee's belated review in 'The Auk' 1912, pp. 119–121. Dr. Richmond might moreover have been separately listed as being one of the authors of the A. O. U. 'Check-List' since all of the others are accorded that honor.

A number of catalogues of ornithological libraries have appeared in the past few years, some of them in themselves constituting rare and beautiful volumes, but the bibliography of American ornithology remains about where Coues left it in 1878. With no thought of criticising such catalogues, especially Mr. Zimmer's, which is more complete than any of the others, one cannot but feel regret that the energy and expenditure required to produce the catalogues, containing much that is merely duplication, could not have been devoted to a continuation of Coues' wonderful work,

in which all papers dealing with ornithology would appear, instead of merely those published under an independent title or those contained in a particular library. By this means the needs of ornithology would be served as well as that of bibliography.

Let us hope that some patron of American ornithology will some day make it possible for a properly equipped compiler to carry on the work of Coues and aid the research of every student by placing before him in chronological order all the papers on American birds from 1878 to date.—W. S.

Meinertzhagen on the Genus Corvus.—This is a very timely paper[1] since the Crows and Ravens have had no comprehensive revision since that by Bowdler-Sharpe in the 'British Museum Catalogue,' in 1877. In his attempt to subdivide the large genus *Corvus* Sharpe proposed to adopt twelve genera. All of these have been abandoned in the review before us and we think those ornithologists who have tried to follow Sharpe's arrangement will agree on the logic of Col. Meinertzhagen's views, unless possibly in the case of *Corvultur*. His remarks upon the subject too are refreshing. He says: "Genus-splitting has of late become a source of confusion to students," a confusion which he later alludes to as "the hopeless and final abandonment of the principle of applying to nature classical names so that the world can understand what we are all talking about."

Our author recognizes 86 races of Crows and Ravens distributed among 33 species which is probably very conservative treatment although a good basis from which to make a fresh start. Doubtless some races here suppressed should be restored to recognition on the evidence of local students and in the same way certain forms regarded as subspecies will prove to be full species. It is impossible for anyone to cover practically the whole world in a study of this sort without making some errors since he cannot know all local conditions.

So far as North American forms go, the author recognizes: (1) *C. brachyrhynchus*, divided into *brachyrhynchus, paulus, pascuus, hesperis* and *caurinus* although he is doubtful as to the distinctness of the first three; (2) *cryptoleucus;* and (3) *ossifragus* which however he considers a subspecies of *mexicanus*. He recognizes only two forms of Raven in America (1) *C. corax sinuatus* to which are referred as synonyms, *clarionensis, europhilus* (in part) and *richardsoni*, and (2) *C. corax tibetanus* of which *principalis* is considered a synonym and *europhilus* (in part). We have always doubted the existence of so many "kinds" of Ravens and are inclined to think that his treatment of the these forms is correct.

There is appended to the main text a list of specific and subspecific names that have been applied to Crows numbering 233; a table of wing formulae for the species recognized and a list of types, with measurements,

[1] Introduction to a Review of the Genus *Corvus*. By Colonel R. Meinertzhagen. Novitates Zoologicae, Vol. XXXIII, pp. 57–121, October, 1926.

of the twelve forms of Australian Crows admitted by Mathews which Col. Meinertzhagen reduces to two, as well as a detailed summary of variation in 211 Australian Crows that he has examined. There are twelve plates depicting the heads of 40 forms of the genus; excellent drawings from numbered specimens in various collections.

Col. Meinertzhagen is to be congratulated upon an admirable contribution to a complicated subject.—W. S.

Rothschild on the Avifauna of Yunnan.—Lord Rothschild's fifth contribution[1] to our knowledge of the birds of the Chinese province of Yunnan comprises not only a list of Forrest's 1925 collection but of all the forms of birds hitherto reported from the Province making an annotated list of no less than 671 species and subspecies, six of which are described as new. In addition there are several discussions of the geographical races of a species which extend beyond the limits of Yunnan, and a list of sixteen species which have been found just across the Red River in Tonkin and will undoubtedly eventually occur in Yunnan.

Lord Rothschild has given us a very helpful list which will be of great aid to those engaged in the study of Chinese birds. We think that he must have confused Dr. Oberholser and Mr. Riley as he refers to the later as "H. C. Riley."

In a short supplementary paper[2] Lord Rothschild reviews Mr. Riley's report on the Rock collection and lists eleven species there recorded as new to Yunnan.—W. S.

Aves for '1925.'—We are once more indebted to Mr. W. L. Sclater for compiling the 'Aves'[3] for the 'Zoological Record.' He has presented a list of 971 titles for the year 1925 and these are rearranged in the usual convenient way under various headings—geographical, subjective, etc., with a systematic list of new species and revisions of groups. We have frequently mentioned that this list is indispensible to the working ornithologist just as other sections of the 'Record' are to other specialists, and have urged all zoologists and scientific institutions to come to the aid of the Zoological Society of London in maintaining the 'Zoological Record' The cost of the yearly volume is 60 shillings while the 'Aves' section may be had for 7s. 6d.

Every active ornithologist should have a complete set of these yearly bibliographies as without them intelligent work is well nigh impossible. —W. S.

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[1] On the Avifauna of Yunnan, with Critical Notes. By Lord Rothschild. Novitates Zoologicae. Vol. XXXIII, pp. 189–343. December, 1926.

[2] Supplemental Notes on the Avifauna of Yunnan. Corrections and Criticisms of the Article on the Avifauna of Yunnan, pp. 189–343. By Lord Rothschild, F. R. S. Novitates Zoologicae, Vol. XXXIII, pp. 395–400, February, 1927.

[3] Aves. By W. L. Sclater. Zoological Record, Vol. LXII, for 1925. pp. 1–70. Zoological Society of London, Regent's Park, London, N. W. 8. Price 7 shillings and six pence. August, 1926.

McAtee on the Relation of Birds to Woodlots.—Mr. McAtee has prepared for the Roosevelt Wild Life Experiment Station an excellent report[1] on the relation of birds to wood lots. While freely acknowledging his indebtedness for basic data on New York birds to the well-known work by Prof. Eaton on the birds of the state, and to the files of the U. S. Biological Survey for data on the food habits of the species, Mr. McAtee's familiarity with all phases of economic ornithology and with the life history and habits of most of the insect pests has enabled him to produce an exceedingly valuable work not only to those interested in conditions as found in New York but to citizens of other states as well. He considers the 'Kinds of Birds Frequenting Woodlots,' 'Seasonal Changes in Woodlot Bird Life,' 'Woodlot Birds of New York and their Economic Relations,' etc., the last topic cited occupying most of the report, and covering in detail the food habits of birds as they affect trees. Under the 'Role of Birds in Woodlot Ecology' the author mentions the Sapsucker as the only species that directly damages trees. Several species eat buds but buds are produced in such abundance that the injury is not appreciable while these same species benefit the trees by destroying noxious insects. Woodpeckers carry spores of destructive fungous diseases but vastly more are carried by the wind and other agencies. Some birds too devour insects which themselves are beneficial in destroying noxious species but here again, the birds also eat the noxious insects, which as our author says is analagous to spraying insect infected plants when good and bad insects are both destroyed but the result is beneficial.

Birds that carry fruit to the fence rows and unconsciously plant trees as Robins, Cedarbirds and Flickers, are directly beneficial, as are also seed storing birds whose stores are often scattered and produce trees. Mice are very destructive to young trees and shrubs and Hawks and Owls which prey on mice are beneficial. Mr. McAtee also points out that rabbits are far more injurious than mice but as they are "game" they must not be destroyed! A good illustration of the growing idea of sportsmen that the conservation of wild life should be conducted solely from the standpoint of the gunner. Everything that destroys game today—except man, is "vermin" according to their idea and should be destroyed while game is to be carefully protected!

Mr. McAtee's report is illustrated by some original photographs and plates from previous publications of the Biological Survey and the Roosevelt Station, from drawings by Fuertes, Sawyer, Kalmbach, Horsfall and Sim.—W. S.

Saunders on Birds of Central New York Marshes.—Another valuable and timely report[2] by the Roosevelt Wild Life Forest Experiment Sta-

[1] The Relation of Birds to Wood Lots in New York State. By W. L. McAtee. Roosevelt Wild Life Bulletin, Roosevelt Wild Life Forest Experiment Station, Syracuse, N. Y. Vol. 4, No. 1, October, 1926, pp. 1–154, figs. 1–22, pls. 1–4. Price $1.00.

[2] The Summer Birds of Central New York Marshes. By Aretas A. Saunders. Roosevelt Wild Life Bulletin, Roosevelt Wild Life Forest Experiment Station

tion is on the 'Birds of Central New York Marshes' with some added notes on birds of Allegany Park, by Aretas A. Saunders. Here as elsewhere the finest marshes have been drained and what was once a wonderful haunt of marsh birds and other forms of wild life is now just a little more farming land. He shows that undrained marsh land properly cared for can be made exceedingly profitable as a reservation for muskrats as well as a haven for migrant Ducks and pleads that provision be made for saving what marsh land remains before fur-bearing animals and game species have been entirely exterminated there.

The main part of Mr. Saunders' report consists of accounts of the habits of the marsh inhabiting birds, notably their varied positions when engaged in the several activities of life, a subject that has been very much neglected and which our author has made still more interesting by a series of outline sketches of the various species in numerous characteristic positions. He has also much to say on voice, nesting, feeding, etc. In fact he presents us with excellent life histories of a much neglected group of birds. Besides his own drawings and photographs there are two color plates from paintings by E. J. Sawyer, illustrating the characteristic species of New York marsh birds. The notes on Allegany Park birds have to do largely with the revival of song in various species in late summer, another topic upon which we have all too little information.—W. S.

McLellan on the Birds of Sinaloa and Nayarit.—Miss M. E. McLellan, assistant curator of birds in the California Academy, spent September and October, 1925, in the northwestern coast district of Mexico collecting for the Academy and, in the paper[1] before us, presents a report on her material. She collected at Labrados about twenty-five miles southeast of Mazatlan and at San Blas in the province of Nayarit (Tepic) and spent a few days on Maria Madre one of the Tres Marias Islands.

An annotated list of 151 species seen or obtained is given, including the description of one new form *Rallus nayaritensis* (p. 9) based on a single immature specimen. Dr. Oberholser we are told regards the bird as a subspecies of *R. longirostris* and from the evidence we think he is correct, though the author prefers to regard it as representing a distinct species. The advisability of describing a new form, upon such unsatisfactory material is decidedly open to question.

The list is a valuable contribution and adds to our knowledge of the distribution of a number of species although the region has been worked by many ornithologists in the past.—W. S.

Syracuse, N. Y., Vol. 3, No. 3, September 1926, pp. 329–475. figs. 88–145, pls. 8–19.

Additional Notes on the Summer Birds of Allegany State Park. By Aretas A. Saunders. Ibid. pp. 476–497, figs. 146–152. Price of entire number, $1.00.

[1] Notes on Birds of Sinaloa and Nayarit, Mexico, in the Fall of 1925. By M. E. McLellan, Assistant Curator, Department of Ornithology and Mammalogy. Proc. Calif. Acad. Sciences, Fourth Series, Vol. XVI, No. 1, pp. 1–51, 3 text-figures. January 31, 1927.

Hartert on Types in the Tring Museum.—This is the seventh installment[1] of Dr. Hartert's list of types in the general collection of birds at Tring and covers the Tubinares—Petrels and their allies. There is considerable discussion on the relationship and nomenclature of many species, and the disposal of many proposed forms as synonyms with full discussion of the reasons therefor will relieve other students of the necessity of examining the types.

The Mathews collection is now at Tring and it will be of interest to students of this group to find that of 36 new names of Petrels, etc., proposed by this author in the preparation of his 'Birds of Australia' no less than 21 are regarded as synonyms by Dr. Hartert.—W. S.

Dickey and Van Rossem on New Birds from Salvador.—Continuing the study of the collections made in Salvador in 1925–26 by the junior author the following new forms are named:[2] *Balanosphyra formicivora lineata* (p. 1), *Mitrephanes phaeocercus quercinus* (p. 2), *Thryophilus pleurostictus lateralis* (p. 3), *Pachysylvia decurtata pallida* (p. 4), *Habia rubica salvadorensis* (p. 4), *H. salvini wetmorei* (p. 5), *Aimophila rufescens pectoralis* (p. 6).

No explanation or reference for the use of the generic name *Habia* is offered and most ornithologists will be quite ignorant as to what sort of birds are being described unless they may happen to be up to date on the recent notes on name shifting. It would seem to be a matter of wisdom, if not of self defense, when such an unfortunate change of generic name is necessary to give some reference or clue as to what group of birds the new forms belong, until the change becomes familiar.—W. S.

Gyldenstolpe on the Bird Types in the Stockholm Museum.—Count Nils Gyldenstolpe has rendered a welcome service to systematic ornithology in publishing a catalogue[3] of the bird types in the historic Stockholm Museum with full discussion of the specimens, the disposition of the names and the relationship of the species.

The types number 283 of which 104 served as the basis of descriptions by Sundeval, and 25 by Sparrman, while the others represent species established by Ljungh, Paykull, Wahlberg, Nilsson, Victorin, Lönnberg, Rendahl, Sjostedt, Zedlitz, Gyldenstolpe, Malmgren, Granvik, Bergman, Söderberg, Reichenow, Meves and Palmen.

It is interesting also to know that two Linnaean types are in the Museum, i.e. *Oriolus aureus* and *Loxia hordeacea*.

Two new names are proposed in the paper, *Poliospiza burtoni gurneti* (p. 18) for *P. b. somereni* Gyld, preoccupied and *Mirafra passerina* (24)

[1] Types of Birds in the Tring Museum. By Ernst Hartert. Novitates Zoologicae, XXXIII, pp. 344–357. December, 1926.

[2] Seven New Birds from Salvador. By Donald R. Dickey and A. J. VanRossem. Proc. Biological Soc. Washington, Vol. 40, p. 1–8. January 8. 1927.

[3] Types of Birds in the Royal Natural History Museum in Stockholm. Arkiv. f. Zool. K. Svensk. Vetenskapsakad, Band 19A, No. 1, Nov. 5, 1926. pp. 1–116.

from Bechuanaland for *M. fringillaris* Auct. nec *Alauda fringillaris* Sundev., which belongs to the genus *Botha* and represents apparently a species distinct from any in the group. A further account of the collection in the Stockholm Museum will be found in Lönnberg's article, in 'The Auk' for October 1926.—W. S.

Rowan on Photoperiodism and Migrations.—This important paper[1] as explained by its author deals with the factors which cause birds to migrate at definite seasons—not with the origin, significance or purpose of migration. Changes in food supply, weather conditions, temperature, etc. cannot be regarded as immediate stimuli to migration but may affect it to a greater or less extent in different species. These factors are too variable in character to be the stimuli of migration which is markedly regular.

What we must look for to explain it is a stable influence as regular as the migration itself. This the author suggests is to be found in, (1) an internal physiological *impelling* factor supplied by the reproductive organs when in a particular state of development and activity, and (2) an environmental *controlling* factor provided by the varying day lengths, increasingly longer in spring and shorter in autumn, corresponding to the time of migration.

By increasing the day length by use of artificial light Juncos kept in outdoor cages in Alberta with a temperature descending at times to 52 below zero developed their gonads prematurely while Juncos kept in cages subjected only to the light received from the sun failed to develop in this respect beyond the winter minimum. Juncos exposed to the extra amount of light also departed at once when liberated, while those kept under normal conditions at this station, far north of their winter habitat until the regular winter minimum of gonad development and then liberated under varying weather conditions, showed no inclination to migrate at all.

Much interesting discussion and details of the experiments leading up to the author's conclusions are presented and should be read by those interested in migration.

The more extended claims of the influence of light on migration as advanced by several writers are considered in detail.

Prof. Rowan is to be congratulated upon a valuable contribution to a subject even yet but little understood, especially in connection with the ingenious experimental method that he has applied to it.—W. S.

Recent Publications by Kuroda.—Dr. Nagamichi Kuroda has recently published a handsome little volume[2] on the 'Birds of Fujiyama' in which 148 species are listed with lengthy annotations. There are many text-figures of mounted birds, skins and nests from photographs and two color plates of birds, one of eggs and a map of the famous mountain. Un-

[1] On Photoperiodism, Reproductive Periodicity and the Annual Migrations of Birds and Certain Fishes. By William Rowan. Proc. Bost. Soc. Nat. Hist., Vol. 38, No. 6, pp. 147–189. December, 1926.

[2] Birds of Fujiyama. By Nagamichi Kuroda, Dr. Sc. 1926. pp. 1–237 + 1–10.

fortunately for American readers the work is entirely in Japanese with the exception of the technical names, synonymy and title.

Another extremely interesting paper[1] by the same author is in English and describes the method of catching Ducks in hand-nets practised on Dr. Kuroda's family estate for many years past. A pond of some three and a half acres in extent carefully shielded from view is resorted to every year by thousands of wild Ducks. From this have been constructed seventeen dyked ditches 48 feet long and six feet across, which have a right angled bend at the middle so that the inner section cannot be seen from the pond At the end of each ditch is a little feeding house presenting a solid wall to the ditch but open behind and with small holes for observation.

Domestic Ducks hatched under a hen are trained to run to a feeding box whenever fed by rapping on the box with a mallet whenever feed is furnished them. When they have become full grown they are released on the pond and are induced to swim up the ditches to feed whenever the caretaker raps on the wooden wall. Wild Ducks naturally follow them and soon the inner ditch will be full of them coming for their share of food which is supplied through a bamboo tube by the concealed "decoy-man" behind the board wall. The "hunters" at the signal suddenly climb up over the dyke which has been constructed along the ditch and as the Ducks take wing they scoop them in with long handled nets which they carry. The utmost care is taken to conceal everyone concerned from the Ducks on the pond. No word is spoken before the operation is started and all communication is by signs.

Dr. Kuroda states that this method secures the Ducks free from blood, or from bird lime which inevitably soil the feathers when the birds are shot or caught by lime and with no discharge of fire arms to frighten them the wild Ducks remain the season through on the pond. No less than 54,000 Ducks have been caught in this way on this pond alone since 1905–6, of which 21,000 were European Teal, 16,000 Pintails, 4,000 Falcated Teal and 3,600 European Widgeon. Dr. Kuroda proposes to invite the visiting zoologists at the Third Pan-Pacific Science Congress to inspect his pond.

Another of Dr. Kuroda's recent papers deals with the Japanese Pheasants[2] and still another with the birds of Mt. Fuji.[3]—W. S.

Kennard on the Snow Geese.—As is well known to many of our readers Mr. Frederic H. Kennard has for some years been making an exhaustive study of the Snow Geese and the Blue Goose. In the paper[4] before

[1] Wild Duck Hunting at Haneda. By Nagamichi Kuroda, Dr. Sc. With 8 plates and 1 map. Published by the author, Tokyo, 1926. pp. 1–22.

[2] Notes on Japanese Pheasants. Bull. Imp. Soc. for Preservation of Scenery, Historic and Natural Monuments. Vol. 1, No. 6, pp. 7–18, Jan., 1926. In Japanese.

[3] Birds of Fuji. By Nagamichi Kuroda. Dobutsugasshi, XXXVIII, Jan. 1926, pp. 7–9. In Japanese.

[4] The Specific Status of the Greater Snow Goose. By Frederic Hedge Kennard. Proc. New England Zoological Club. Vol. IX, pp. 85–93 February 16, 1927.

us he presents a welcome array of measurements of the two forms of Snow Geese and other data to show their distinctness and their respective ranges. Rather recently some ornithologists questioned the existence of two races of these birds but the reviewer always maintained the distinctness of the two forms and Mr. Kennard has forever settled that question.

The range of the Greater Snow Goose so far as we know seems to be north Greenland, while the smaller form ranges all the way from Baffin Land to Pt. Barrow, Alaska, and eastern Siberia. In winter the large race is confined to the Atlantic Coast of North Carolina, Virginia and Maryland according to Mr. Kennard, though apparently some remain in Delaware Bay where the entire flock stops for some time in early spring on its way north. The winter range of the smaller bird covers the country west of the Mississippi from Louisiana to California.

Mr. Kennard in this paper not only emphasizes the fact that there are two perfectly separable forms of Snow Geese but proposes to regard them as species instead of geographical races. His series of measurements, however, shows overlapping of dimensions which according to all our standards indicate subspecific difference and intergradation has always been our criterion for a subspecies. Furthermore a subspecies may be just as important as a species (as witness the great Aleutian Song Sparrow) and it in no way affects the value of Mr. Kennard's admirable paper to continue to recognize the two Snow Geese as subspecies—indeed it is fortunate that we can do so since it emphasizes the obvious fact that they are geographic derivitives of the same stock.

In attacking the nomenclatural side of the question Mr. Kennard claims that Forster's name *nivalis* which has universally been applied to the Greater Snow Goose really belongs to the smaller bird because Forster's specimens came from Severn River where in recent times only the latter form has been found, and he further considers that the large bird does not occur anywhere on Hudson Bay, the only evidence being a specimen in the National Museum labelled Hudson Bay with no further data.

Unfortunately the rules of nomenclature do not always correspond to what appear to be the ornithological facts. We cannot, in settling nomenclatural matters, infer what an author intended to do or should have done, but must concern ourselves wholly with what he actually did do. In this case Forster described a Snow Goose and the impossibility of determining from his description which one he intended to name, is admitted. As a matter of fact he included references relating to both forms and did not of course know that they were different. Cassin, years later, restricted Forster's name *nivalis* to the Greater Snow Goose, and we, personally, feel that his action must be accepted.

It would be logical, in view of the facts of distribution that Mr. Kennard has brought together, to do just as he has done but Cassin's action has precedence. The case seems to be analagous to many cases of fixing generic types, where it seems obvious from present day knowledge what

species the author had in mind when he proposed his genus but if some subsequent author has fixed a wholly different species as the type our hands are tied!

In any case the rejection of a well established name is not warranted unless the facts are absolutely proven, and should a straggling Greater Snow Goose occur on the Severn River, which seems quite possible, Mr. Kennard's argument would fall to pieces.

Nomenclature is the bane of ornithology, there is always difference of opinion regarding it, and others may not agree with our views. However, we are in hearty accord with the ornithology of Mr. Kennard's paper and congratulate him on a fine piece of work.—W. S.

Wood on the Nest of the Indian Tailor Bird.—In this interesting paper[1] Dr. Casey A. Wood describes several nests of the Tailor Bird, *Orthotomus suturius suturius*, which he studied in Ceylon. There are five plates from photographs of nests of the species which add greatly to our understanding of the building of these remarkable structures. Sometimes the nest is made of a single leaf, sometimes of several, and there are four distinct methods employed in binding the leaves together which Dr. Wood calls sewing, rivetting, lacing and matting.

The bird makes tiny holes in the leaf with its sharp bill and draws the strands of delicate fiber through those along the leaf margin, pulling the edges together and often lacing them much as a shoe is laced. Through the holes in the body of the leaf pieces of cotton fibre from the lining are drawn and the loose end forms a sort of button or rivet head on the outside. This has erroneously been considered a knot by some writers.—W. S.

Harper on a New Marsh Wren from Alberta.—A series of Marsh Wrens collected on the Athabaska Delta by the author, H. A. Laing and J. A. Loring are here[2] made the basis for a new race *Telmatodytes palustris laingi* (p. 221). The type is in the Museum of Comparative Zoology. —W. S.

Friedmann on Three New African Birds.—Dr. Herbert Friedmann describes[3] from his African collection of 1924 *Parus albiventris curtus* (p. 217), *Amadina fasciata candida* (p. 218) both from Taveta, Kenya Colony and *Parisoma pulpum* (p. 219) Gunnal, Portuguese West Africa. The descriptions are full with ample comparison with allied forms.—W. S.

Bangs on a New Parrot from Madagascar.[4]—Specimens of the Lesser

[1] The Nest of the Indian Tailor Bird. By Casey A. Wood. Smithsonian Report for 1925, pp. 349–354, pls. 1–5.

[2] A New Marsh Wren from Alberta. By Francis Harper. Occasional Papers of the Boston Society of Natural History, Vol. 5, pp. 221–222, December 10, 1926.

[3] Three New African Birds. By Herbert Friedmann. Occasional Papers of the Boston Society of Natural History, Vol. 5, pp. 217–289, December 10, 1926.

[4] A New Form of the Lesser Vasa Parrot. By Outram Bangs. Proc. New England Zoological Club. Vol. IX. pp. 83–84, January 8, 1927.

Vasa Parrots recently received at the Museum of Comparative Zoology show that there are two forms of this bird, the black typical form occurring in the eastern part of the island while a gray form inhabits the western part. This is described as *Coracopsis nigra libs* (p. 83) Miandrivazo, Madagascar.—W. S.

Bangs and Peters on Birds of the Rain Forest of Vera Cruz.—The annotated list[1] here presented covers the collection made by W. W. Brown at Motzorongo and Presidio, Vera Cruz. He was sent out by Col. John E. Thayer especially to search for the great ornithological rarity, *Hylorchilus sumichrasti* (Lawrence), a species of Wren hitherto known from only three specimens. That his search was successful may be gathered from the fact that he secured no less than thirty-eight specimens together with the nest and eggs. Col. Thayer has presented all of the collection except the North American migrants to the Museum of Comparative Zoology. The new forms described in the paper by Messrs. Bangs and Peters are: *Cryptturornis cinnamomeus praepes* (p. 472) Costa Rica, *Synallaxis erythrothorax furtiva* (p. 476) Vera Cruz, and *Henicorhina prostheleuca tropaea* (p. 480) Costa Rica. There are important comments on the relationship of the races of *Scardafella inca*, *Stelgidopteryx ruficollis* and *Pachysilvia decurtata*.—W. S.

Report on the Ruffed Grouse Investigation.—Drs. A. A. Allen and A. O. Gross present a preliminary report[2] on investigations on the diseases of the Ruffed Grouse which they have been carrying on. Results so far seem to show that there is a great scarcity of Grouse at scattered points in Canada and the northern States. In spite of the prevalent idea that there is one disease responsible for the decrease in the birds, investigation shows that there are over twenty parasites or diseases any one of which may become important in a definite locality.

The symptoms and character of these affections are described and a call is made for additional material. Whole birds are better than viscera and many State Game Commissions have authorized their wardens to obtain material for the investigators or to allow hunters to secure it without counting it against their bag limit. Communications should be addressed to the Grouse Investigation Committee, 233 Broadway, N. Y., and details as to shipping will be forwarded. This is a very important piece of work and deserves the support of all sportsmen if this valuable game bird is to be saved.—W. S.

McAtee on the Role of Vertebrates in Insect Control.—In this interesting summary[3] the author cites numerous instances where a con-

[1] Birds from the Rain Forest Region of Vera Cruz. By Outram Bangs and James L. Peters. Bull. Mus. Comp. Zool., Vol. LXVII, No. 15, January, 1927. pp. 471–487.

[2] Reprint from 'American Game' Bulletin of the American Game Protective Association, October, 1926.

[3] The Smithsonian Report for 1925.

spicuous outbreak of some insect pest was at once met by the activity of birds which naturally take advantage of a sudden abundance of satisfactory food. In 109 cases the birds soon had the insect outbreak under control and in 88 cases local suppression of the insect was accomplished. The reviewer has noted several cases similar to those cited. At Solon Springs, Wis., in June, 1926, there was a great swarming of Mayflies that attracted birds of several species which simply gorged themselves for a few days destroying a large proportion of the flies. Then when the flight was over they disappeared. Again at Cape May, N. J., in August, 1925, an attack of the Catalpa caterpillar threatened to defoliate these trees but the sudden appearance of Black-billed Cuckoos practically exterminated them in a few days.

The importance of the *presence* of a "bird army" ready to cope with any sudden insect emergency is well emphasized in such cases, and should be borne in mind when destruction of bird haunts is imminant. As particularly apropos of the present time, when thoughtless and ignorant persons are advocating the extermination of the Crow, Mr. McAtee cites a number of instances of Crows practically exterminating white grubs, following the farmer's plow and picking up 90 per cent of all that it turned up.—W. S.

Bird Protection and Conservation Notes.—The Illinois Audubon Society has issued another of its 'Audubon Bulletins,' No. 17. It contains among other items an account, of the proof by bird banding data that the Mourning Dove is a migratory bird thus securing for it the protection of the Migratory Bird Treaty. The Ridgway Memorial Fund is discussed with illustrations of Larchmound. There are other beautiful illustrations and the publication lives up to the high standard of its predecessors.

The Australian Museum, College St., Sydney, N. S. W. is issuing a series of educational postal cards each depicting a species of Australian bird in colors, the artist's work being very well done. Six sets of five cards each are available at one shilling per set with an explanatory leaflet.

Hans Freiherr von Berlepsch has issued a pamphlet covering his 18th year of bird study and bird protection.

Archibald Rutledge has a timely warning to farmers to leave some uncleared brush land as shelter for the birds since they will leave a farm that is too clean and the farmer then looses their valuable services. The paper appeared in the 'Saturday Evening Post' for July 31, 1926, and has been reprinted in 'California Fish and Game' for October.

In the latter journal H. C. Bryant discusses the destruction of Western Mourning Doves in California where Dove hunting is still legal.—W. S.

The Food of Some British Wild Birds.[1]—Dr. Walter E. Collinge has in this revision of his 1913 book of the same title completed a monumental

[1] Published by the Author, The Museum, York, England, in 9 parts, 1924-1927, Price 50 shillings.

personal achievement. He assembled and examined some 10,000 stomachs of birds besides large numbers of pellets, incorporated field notes and other findings from over 20 years of study, and has personally published the results to the extent of more than 400 royal octavo pages, with eight plates, forty graphic diagrams and numerous tabulations. Such a piece of work has not been accomplished elsewhere without state support, and our gratitude for his self sacrificing efforts as well as praise for the quality and magnitude of his work must be tendered Dr. Collinge.

The introduction notes previous accounts of the economics of British bird life and sketches the main problems of economic ornithology and the general make-up of the British avifauna. Of a total of about 380 species recorded for the British Isles, only about 75 species are common, and come in close enough contact with man, to require treatment in the work. Considerable attention is given to methods used in economic ornithology bothas to their history and technique and Dr. Collinge supplements arguments made by others in advocating the volumetric system as the only satisfactory one for use in the study of food habits.

In a chapter on The Food and Feeding Habits of Nestling Birds, Dr. Collinge indicates that British birds agree with the majority of those studied in other countries in giving a very high proportion of animal food to their young. Experiments performed by Dr. Collinge on the rate of digestion by adult birds indicate complete digestion of all classes of food in 3½ to 4 hours, results agreeing with those obtained by other investigators. The systematic account of the food of 70 species extends from page 50 to 299. From this we learn that the House Sparrow is far too, plentiful and except in from the nesting season does more harm than good that the Starling has become a plague in the land and a source of great national loss, but that the Pheasant is a most valuable bird and its relation to agriculture directly beneficial. These are noted here as species introduced to the United States where their economic status may or may not work our parallel to what it is in the country from which they were derived.

The food of seabirds is given special consideration in two chapters and the conclusion reached that "no action of man or of wild birds can produce any appreciable effect upon the plenitude of fishes of the sea" and that there is no excuse for the slaughter of sea birds as fish destroyers.

The book concludes with chapters on Birds in Relation to Forestry, Birds as Destroyers and Distributors of Weed Seeds, Wild Birds and Legislation, Protective measures, Summary and Conclusions, and a Bibliography of more than 660 titles.

American writings on economic ornithology have been given much consideration in the preparation of this work and are frequently quoted. One of the Plates is a portrait of Professor F. E. L. Beal to whom the work is dedicated in the following words:

"To the memory of Professor F. E. L. Beal, the most brilliant economic ornithologist of his day, whose writings have been an incentive and a

source of inspiration to all who have followed him, This Work is gratefully and respectfully inscribed by The Author."

Another portrait in the work is one of the author and it is most welcome. —W. L. M.

Birds as Distributors of Barberry.—The common barberry (*Berberis vulgaris*) has come into unfavorable notice in recent years as the most important intermediate host of the black stem rust of wheat and other grasses. A campaign for eradicating the plant is described in a recent bulletin[1] of the United States Department of Agriculture in which information is given as to the distribution of barberry seeds by birds, both in text and illustrations. The statement is made that "birds and cattle are the chief natural means of distributing escaped barberries in the United States, the birds serving to distribute the seed over an extensive area, and the cattle intensively over more limited areas" (p. 4). No proposals are made for aggressive action against birds.—W. L. M.

Economic Ornithology in Recent Entomological Publications.—Interesting information on the bird enemies of various insect pests in articles that have appeared recently is cited below, in one case with reference to additional data from other sources.

Grasshoppers.—An outbreak of grasshoppers, the most extensive since the invasion of the Rocky Mountain locust in 1874, occurred on the Canadian prairies in 1919–1923. Norman Criddle, both entomologist and ornithologist, has written several papers on the subject, of which one in the 'Fifty-fifth Annual Report of the Entomological Society of Ontario' (1924 [1925] pp. 13–16) contains interesting references to bird enemies of the pests. "Gulls," states this author, "proved an important local factor in preventing and controlling grasshopper outbreaks and their value within an area of twenty miles of their breeding places can hardly be overestimated. The most important species in Manitoba was Franklin's Gull.

"Crows could always be counted upon to frequent grasshopper infested fields and several incipient outbreaks were checked by these birds. They also learn to locate the *Camnula* egg beds, among which they did valuable service. Many birds feed regularly upon grasshoppers, and some, such as the Sharp-tailed Grouse, depend very largely upon them as food for their young. These species are all useful in maintaining a balance, but it is to those birds that gather in flocks that we owe most when grasshoppers have got beyond their normal numbers." (p. 15.)

Pale Western Cutworm (*Porosagrotis orthogonia*).—This pest which sometimes destroys thousands of acres of grain in the western United States and Canadian Provinces has bird enemies which are briefly mentioned in a pamphlet[2] of the Dominion of Canada Department of Agri-

[1] No. 1451, Dec. 1926, 44 pp., 13 pls.
[2] No. 71, June, 1926, p. 5.

culture. The writer of this publication, Mr. H. L. Seamans, says: "Both the Crow and the Horned Lark dig the cutworms out of the soil, but most of the birds pick them up only when they find them upon the surface." Birds also prey upon the moths.

Tobacco cutworms.—A number of species of cutworms seriously destructive to tobacco transplants are treated in a recent bulletin[1] by Mr. S. E. Crumb who has a good word for the birds. These, he says "play an important part in the control of cutworms. During May cutworms and similar larvae make up more than 20 per cent of the average diet of such common species as the Chipping Sparrow, Cardinal, Meadowlark, Robin, Redwing Blackbird, Bluebird, Bobolink, Carolina Wren, Bobwhite and Crow." (p. 8.).

Clover root borer (*Hylastinus obscurus*).—Mr. L. P. Rockwood, author of a recent bulletin[2] makes a definite contribution to knowledge of the bird enemies of this destructive insect. At Forest Grove, Oregon, in April and May, 1920, 53 birds of 22 species were collected "near clover fields on days when it was known that the root borers were migrating by flight. On examination of their stomachs, 39 root borers were found in the contents of 12 of them, representing 8 species of birds." (pp. 38–39.) The birds found to have eaten root borers were: Streaked Horned Lark, Brewer's Blackbird, Oregon Vesper Sparrow, Townsend's Fox Sparrow, Golden-crowned Sparrow, Cliff Swallow, Northern Violet-green Swallow, and Pacific House Wren.

White-pine weevil (*Pissodes strobi*).—This weevil is one of the most destructive pests of the eastern white pine, and according to a recent treatise of the species including discussion of its natural checks, "Of all the vertebrates birds are undoubtedly the greatest enemies of the weevil. It is more or less common, in infested patches, to find some of the infested shoots cleaned out by birds."[3] Although no definite observations as to the species of birds concerned are made in this publication, we know from other sources[4] that Woodpeckers, Yellow-billed Cuckoos, English Sparrows, and Bluebirds are among them.

Ants.—Prof. E. A. Andrews in a paper on the sequential distribution of ant nests in Maryland reports that "Attempts to establish transported mounds both in city back-yard and in the old forest at Homewood, in 1906, 1916, and again in 1926 proved futile; some communities of this ant, *Formica exsectoides* planted at Homewood at various seasons of the year were decimated by birds, especially Robins and Flickers. Thus one influence of forestation on this ant will be through the bird fauna of the forest; for where the Robin is favored by the vegetation there can not be

[1] Farmers' Bul. 149, U. S. Dept. Agr., Aug., 1926., 13 pp, 11 figs.
[2] No. 1426, U. S. Dept. Agr., 48 pp., 15 figs., Aug., 1926.
[3] Graham, S. A., Bul. 449, Cornell Agr. Exp. Sta., 1926, p. 27.
[4] Felt, E. P., Mem. 8, N. Y. State Mus., 1905, p. 400.
Hopkins, A. D., U. S. Bur. Ent. Circ. 90, 1907, p. 7, and
McAtee, W. L., Roosevelt Wild Life Bul., Vol. 4, No. 1, 1926, p. 115.

good stands of these ant dwellings, and when the trees have grown so large as to furnish not only food but nesting sites for Flickers, this ant can not be expected to flourish."[1]

These observations and comment are interesting as showing what birds can do in destroying local colonies of insects even so populous as those of ants; also they are further evidence that ants scarcely deserve the term "specially protected" applied to them by neo-darwinians.—W. L. M.

The Ornithological Journals.

Bird-Lore. XXVIII, No. 6. November–December, 1926.

Friendly Siskins. By Edward Russell Davis.—A remarkable instance of fearlessness.

Bird Photography for Everybody. By A. T. Devoe.—Showing what may be done with a Kodak with portrait attachment.

The Parauque and Poor-will are the subject of the migration and plumage notes, with a color plate by Fuertes.

There is a remarkable record by E. K. and D. Campbell of Chimney Swifts roosting in a dense mass on a tree trunk and an excellent paper on the classification of birds by Dr. A. A. Allen.

The interesting annual report of the National Association of Audubon Societies and the numerous affiliated bird clubs in all parts of the country takes up most of the number.

Bird-Lore. XXIX, No. 1. January–February, 1927.

Bird Haven. By F. M. Chapman.—An account of the Ridgway Wild Life Sanctuary and the plans of the committee for raising the necessary $35,000 endowment fund.

The Christmas Day bird lists occupy most of this issue but there is an instructive paper by A. A. Allen on Feathers and a pleasing frontispiece by Allan Brooks representing the Ovenbird.

The Condor. XXIX, No. 1. January–February, 1927.

The Surf-bird's Secret. By Joseph Dixon.—A notable paper on the discovery of the nest and eggs of this elusive species in the Mt. McKinley district of Alaska, with excellent photographs of the birds and nest and a color plate by Allan Brooks. The male bird was found to carry on the duties of incubation.

Emargination of the Long Primaries in Relation to Power of Flight and Migration. By C. K. Averill.

Notes on the Location and Construction of the Nest of the Calliope Hummingbird. B. W. Weidemeyer.

Eyeshine in Birds. By A. J. VanRossem.—Eyes of some species show varying shades of red, some pale green and some no color whatever.

[1] Psyche, 33, No. 6, Dec., 1926, p. 145.

Breeding Birds of Scammon's Lagoon, Lower California. By G. Bancroft.—Exceptionally fine photographic illustrations of nests and eggs.

The Birds of Natividad Island, Lower California. By Chester C. Lamb.

New forms are described in the 'Field and Study' section as follows: *Icterus sclateri pustuloides* (p. 76), Volcan San Miguel, Salvador; *Spizella passerina aridula* (p. 81).

The Wilson Bulletin. XXXVIII, No. 4. December, 1926.

A Study of a Nesting of Magnolia Warblers. By Margaret M. Nice.—At Pelham, Mass.

Nesting of the Common Tern at Thousand Islands, Jefferson Co., New York. By Clarence Bretsch.

A Field Trip in the Sierra. By Mrs. H. J. Taylor. At Echo Lake, California.

The Birds of the Choctawhatchee Bay Region of Florida. By W. W. Worthington and W. E. C. Todd.—An annotated list of 160 species.

The Cardinal. II, No. 1. January, 1927.

Our Friend the Cardinal. By Harry C. Oberholser.—A life history of the bird with a pleasing plate from a painting by Sutton.

The John B. Semple Expedition. By W. E. Clyde Todd.—An account of the author's recent exploration of the country lying between Ungava Bay and Hudson Bay.

Robert Ridgway, The Man. By Norman McClintock. With an excellent photograph.

Mr. Christy has recently had some sets of his admirable little journal—the eight numbers constituting Volume I, bound up with an index, in a handsome red binding forming a most attractive book on the bird life of western Pennsylvania.

The Oölogist. XLIII, No. 11. November, 1926.

Bird Island, Great Salt Lake. (No author mentioned.)

The Jamestown, N. Y., Starling Roost. By Russell L. Walp.

Against the Cowbird. By Johnson A. Neff.—A list of nests in which Cowbird's eggs have been found at Marionville, Mo. The scarcity of other birds charged to the Cowbird is obviously due to some other cause as Cowbirds have been laying eggs in other birds nests in various parts of the country for centuries with no apparent effect upon the abundance of the latter, nor has the Cuckoo in England had any effect on the abundance of small birds.

The Oölogist. XLIII, No. 12. December, 1926.

My First Ivory-billed Woodpeckers. By D. J. Nicholson. Seen in Osceola Co., February 1, 1926. The Life History of the Long-Billed Marsh Wren. By R. W. Shufeldt.—With several full page photographs of the nest. (Continued in January.)

The Oölogist. XLIV, No. 1. January, 1927.

Nest of Solitary Sandpiper, Yellow-legs and Buffle-head Duck. By Walter Raine.—At Little Red Deer River, Alberta.

Snowy Owls Numerous. By C. H. Richter.

Clay-colored Sparrow at Gary, Ind.

Bulletin of the Northeastern Bird Banding Association. III, No. 1. January, 1927.

The Infestation of Bluebird's Nests by *Protocalliphora*. By C. W. Johnson.

Tree Sparrow Returns and Migration. By W. P. Smith.—The first birds to arrive in the autumn pass on before the winter residents arrive while the latter have all left before the arrivals from farther south come through.

The influence of Groups or Clans as Affecting the Presence of Birds at Banding Stations. By Charles L. Whittle.

The Ibis. (12 series) III, No. 1. January, 1927.

Notes on Some Birds of Cameroon and the Lake Chad Region: their Status and Breeding Times. By G. L. Bates.—Notes on the distribution and molt of many species, with a color plate of a number of eggs. *Scotornis climacurus sclateri* (p. 20) is described as new, from Ngaundere.

On *Oenanthe hispanica*, *Oe. finschii* and *Oe. picata*. By C. B. Ticehurst.

Some Notes on the Birds of Corsica. By W. A. Payn.

Some Notes from Dutch Guiana. By C. G. Young.—List of a few species seen during a four days stay in the country.

A Contribution to the Ornithology of Naples and the Phlegraean Fields. By B. W. Tucker.

On the Anatomy and Systematic Position of *Aechmorhynchus*. By Percy R. Lowe.—This study is based upon a skin and three alcoholic specimens received from the American Museum of Natural History. This rediscovered bird, the anatomy and pterylography of which have never before been worked out, appears to be a specialization of some early stock, now extinct, along the same line of development which has resulted in the Curlews. Dr. Lowe further considers that all of the subfamilies of Scolopacidae should be regarded as derivatives of more ancient and extinct groups and that no one of them is directly ancestral to another.

Short Report of the Second Expedition to French Indo-China. By Jean Delacour, P. Jaboulle and Willoughby P. Lowe.—Undertaken in 1925–26. One of the most interesting results was the rediscovery of *Pitta elliotî* known only from the types obtained in 1874 and 1877.

Some Notes on the Birds of Alderney. By W. R. Thompson.

Bulletin of the British Ornithologists' Club. CCCIX, Nov. 27, 1926.

M. U. Hachisuka proposed the naming of "mutants" after the manner of subspecies but with the designation "mut." before the trinomial. In

discussion the majority of the members present were opposed to the practice, in which opinion we agree. So far as nomenclature goes we must recognize such names in every case where a true geographical subspecies is concerned and it needlessly complicates synonymy.

The same author described fifteen new subspecies from Borneo, Sumatra, the Malay Peninsula, Philippines, etc. and Mr. Stuart-Baker described four Owls from the Orient, of the genera *Athene*, *Glaucidium* and *Ninox*, while Mr. A. L. Butler proposed a new Hummingbird from the western side of Pichincha, Ecuador, *Eriocnemis söderstromi* (p. 62).

Bulletin of the British Ornithologists' Club. CCCX, Dec. 29, 1926.

Dr. O. Kleinschmidt regards the forms of the genus *Oxypogon* as a beautiful example of a "Formenkreis."

Messrs. Lowe and Kinnear conclude that *Motacilla alba* and *lugubris* are specifically distinct.

Mr. G. M. Mathews describes as new *Cyrtostomus frenatus hachisukae* (p. 67), Obi Island and *C. f. olivaceus* (p. 68) Goodenough Island.

Mr. M. Hachisuka described five new forms of the genera *Anthreptes*, *Leptocoma*, *Dicaeum* and *Excalfactoria*.

Bulletin of the British Ornithologists' Club.—CCCXI. January 31, 1927.

Mr. Stuart-Baker described new forms of *Alcedo* and *Amaurornis* from Ceylon; Mr. N. B. Kinnear a new *Iynx* and *Cyanopica* from Siberia. Mr. H. Whistler, *Gyps indicus jonesi* (p. 74) from Margala Range, Rawal Pindi district. Mr. Hachisuka proposed *Passer italae payni* (p. 76) from Corsica and withdrew four of the "new" forms described in the November issue as they had been previously named by others!

British Birds. XX, No. 7. December, 1926.

Some Breeding Habits of the Lapwing. By R. H. Brown.

Proportions of Male and Female Duck on Tay Estuary, 1910–1925. By H. Boase.

Fledgling Periods of Some British Birds. By T. G. Longstaff and F. C. R. Jourdain.

British Birds, XX, No. 8. January, 1927.

Notes on Alberta Waders Included in the British List. By William Rowan. Part V. Buff-breasted Sandpiper.

The Courtship of the Common Scoter. By Donald Gunn.—*Oidemia nigra nigra*.

British Birds. XX. No. 9. February, 1927.

Notes on Alberta Waders Included in the British List. By William Rowan. Part VI. Dowitcher and Spotted Sandpiper.

Wall-Building Birds. By F. C. R. Jourdain.

The Avicultural Magazine. IV, No. 12. December, 1926.

Mr. Alfred Ezra presents a colored plate and a photograph of the pair

of Pink-headed Ducks (*Rhodonessa caryophyllacea*) which he received a year ago and which are still in robust health in his aviary although they have not bred.

The Avicultural Magazine. V, No. 1. January, 1927.

American Bird Gossip. By James B. Housden.—"The Ivory-billed Woodpecker" which the writer found in Mexico is of course not "*principalis*," as he states, but another species, *C. imperialis*.

The Avicultural Magazine. V, No. 2. February, 1927.

Notes on the Birds of Mount Selinda. By Sydney Porter. (Concluded.)

The Oölogists' Record. VI, No. 4. December, 1926.

A Nesting Expedition in Esthonia. By R. F. Meiklejohn.

The Emu. XXVI, Part 2. October, 1926.

Habits of the Boobook Owl. By D. H. Fleay.—With a fine series of photographs.

Prince Edward's Lyre-Bird Revisited. By Spencer Roberts.—A most attractively written account of the haunt and habits of this interesting bird, first described in 1921. (Emu, XX, p. 221.)

Mistletoe-Birds as Plant Distributors. By G. A. Heumann.—*Dicaeum hirundinaceum* feeds largely upon mistletoe berries and the seeds encased in a gelatinous substance, the result of digestion in the bird's stomach, are dropped on the tree branches to which they at once adhere and sprout. The writer claims that the seed will grow only when deposited by the bird.

Economic Value of the Stubble Quail. By J. R. Kinghorn.

The Charming Crescent Honeyeater. By D. Dickison.

British and Australian Birds—A Comparison. By H. Wolstenholme.—Winter visitants and transients to which many British species belong are groups practically unknown in Australia. As to song the writer considers that Britain's best singers are common species and more generally heard than Australia's best singers, but they have not the variety of song nor the vocal power of the Australian songsters.

Birds of Cobark, N. S. W. By W. J. Enright and J. Hopson.

Letters still appear on the violations of classical usages in the names adopted in the 'Check List,' "obvious errors of spelling," "anomalies," etc. Why will not some ornithologists read the Code of Nomenclature and realize that modern scientific names are not part of classical literature but a system of tags by which we try to let one another know what we are talking about. There are complications enough when we observe the rules but if we abandon them and set up new standards where are we to land?

The South Australian Ornithologist. Vol. VIII, Part 8. October, 1926.

This number is almost entirely taken up with a list of the bird books in the Adelaide libraries.

The South Australian Ornithologist. IX, Part 1. January, 1927.

A Week in the Robe District. By J. Sutton.

A List of Species of Birds seen on Hindmarsh Island, S. A. By Harry H. Newell.

Revue Francaise d'Ornithologie. No. 211. November 7, 1926. [In French.]

A Journey across Africa from Tunis to Kotonou. By L. Lavauden.—The map shows a revision of Chapin's southern limit of the Palaearctic Fauna. (Completed in the December issue.)

Observations of 1926 on a Colony of banded Swallows (*H. rustica*). With considerations of the return of the young to the Nest and the Domestic Relations of the Bird. By R. d'Abadie.

Contribution to the Ornithology of Northern Algeria. By H. Heim de Balsac.

Revue Francaise d'Ornithologie. No. 213. January 7, 1927. [In French.]

Concerning the Blue Pie (*Cyanopica cyanea cooki*). By P. Estiot.

The Two Sylvias (*S. atricapilla* and *borin*). By P. Madon.

With this issue the Societe Ornithologique changes its name and scope and becomes the Societe Ornithologique et Mammalogique de France.

L'Oiseau. VII, No. 10. October, 1926. [In French.]

The Birds of Japan. By J. Delacour.

Der Ornithologische Beobachter. XXIV, No. 1. October, 1926 to No. 4, January, 1927. [In German.]

On the Northern Jerfalcons. By A. Hess.—A colored plate of *Falco rusticolus candicans*. (Oct.)

The King Albatross. By L. Kohl.—*Diomedia regia* of Campbell Island. (Oct.)

The Great Storks of Africa. By A. Hess.—Photographs of the Saddle Stork and the Shoebill from Bengt Berg. (Nov.)

Here and There in Egypt and the Anglo-Egyptian Sudan. By A. Mathey Dupraz. (Dec.)

The First Cock-crow of the Morning as an acquired and transmitted Character. By R. Hottinger. (Jan.)

Journal für Ornithologie. LXXV, No. 1. January, 1927. [In German.]

Seventy-fifth Anniversary of the founding of the 'Journal for Ornithologie.'

The 1925 Dobrudscha Expedition. By G. Heinrich.

A Contribution to the Ornithology of East Holstein. By Carl Lunau.

Are the eggs of our Two species of Certhia Distinguishable? By R. Schlegel.

On the Feather Abrasion in the Red Linnet. By K. Gornitz.

Remarks on Sunkel's 'Bird Life of Hesse.' By E. Hartert.

The Migrations of the Red-tailed Shrike (Formenkreis *Lanius cristatus*). By E. Stresemann. With maps and bibiliography.

Contribution to Our Knowledge of Powder Formation in Birds. By E. Schuz.

Oological Studies. By F. Groebbles.—On weight and specific gravity.

Ornithologische Monatsberichte. 35, No. 1. January, 1927. [In German.]

The Wooing of the Avocet. By J. S. Huxley.

On the White and Red Musculature in Birds. By O. Heinroth.

On the Formenkreis and Races of *Buphagus*. By H. Grote. *B. africanus megarhynchus* (p. 12), Lake Kivu, *B. erythrorhynchus caffer* (p. 13), Selala River, are described as new.

The Egg of *Struthio camelus spatzi*. By M. Schonwettes.—Discusses the differences in the eggs of the several forms of Ostrich.

Neumann describes four new races of birds from New Guinea and Oceania, of the genera *Alisturus* and *Lalage*.

E. Snethlage describes *Xiphocolaptes franciscanus* (p. 8) from interior of Brazil; and H. Grote (p. 23) proposes *Apalis cinerea granviki* for *A. c. minor* preoccupied.

Contributions to the Breeding Habits of Birds. III, No. 1. January, 1927. [In German.]

The Breeding time of Birds in Northwestern Africa. By E. Hartert.

Ornithological Results of Two Short Trips to the Balearic and Pityusse Islands. By P. Henrici.

Ardea. XV, No. 3. December, 1926. [In Dutch.]

The Netherlands Blue Heron Colonies in 1925. By G. A. Brouwer.—An extensive paper with maps and bibliography.

Yearbook of the Netherlands Ornithological Club. 16, No. 3. December, 1926. [In Dutch.]

An Extended account of the International Ornithological Congress at Copenhagen with photographic illustrations occupies most of the number.

Danske Fugle. 7, No. 2. [In Danish.] Nearly the entire number is taken up with a report on the migration of Danish Birds of Prey. Sixteen of 23 banded Hen-hawks (*Astur palumbarius*) were retaken in Denmark. Of 172 Sparrow Hawks (*Accipiter nisus*) 45 were reported but only 13 from Denmark the species being largely a migrant. Of 110 Buzzards (*Buteo buteo*) 48 were reported mainly south of Denmark and 34 of the 234 Kestrils (*Falco tinnunculus*).

Ornis Fennica. III, No. 4. 1926. [In Finnish.]

Contains articles on raising Mallard Ducks, on *Clangula hyemalis* and local migration notes.

Tori. V, No. 22. December, 1926. [In Japanese.]

A Nest of *Oreocincla d. aurea* (Plate) with Notes by Y. Okada.

On a Small Collection of Birds from the Riu Kiu Islands. By N. Kuroda

Notes on the Allied Genera of Graphophasianus and their Generic Characters. By M. Hachisuka.

On the Specimens of Birds collected on Quelpart Island, South of Korea. By T. Momiyama.

On an Apparently New Subspecies of *Corvus corone* from Sakhalin. By S. Kumagai.—*C. corone saghalense* (p. 127). There is a figure of the head but the diagnosis is in Japanese.

Stories of the Swans of Europe. By M. Hachisuka.

El Hornero. III, No. 4, August, 1926. [In Spanish.]

The Petrels and Albatrosses of the South Atlantic. By R. Dabbene.—With maps showing exact locations of occurrence.

List of the Birds of Santa Fe. By A. S. Wilson.

The Common Argentine Names of the Wild Birds of the Republic. By E. L. Arribalzaga.

Birds in South American Folk-Lore. By R. Lehmann-Nitsche.

Pathalogical Observations on Birds. By C. A. Marelli and F. A. Ubach.

New Species for Argentina and Other Short Notes. By R. Dabbene.

Ornithological Notes. By A. De Winkelried Bertoni.—Migration of Birds in Paraguay, The food of *Anteliodacnis* the nesting of *Chaetura cxyura* etc.

The Murrelet. VIII, No. 1. January, 1927. [Mimeographed.]

Some Relationships of the Parasitic Flatworms of the Birds of the Northwest. By J. E. Guberlet.

Neritas Bay Revisited in 1926. By Stanley G. Jewett.

High Lights of the Past Nesting Season in Georgia. By T. D. Burleigh.

Nisqually Notes for the Autumn of 1926. By E. A. Kitchen.—An annotated list.

Nesting of Townsend's Solitaire. By J. H. Bowles and F. R. Decker.

The Japanese Starling in Vancouver. By W. N. Kelly.

Ornithological Articles in Other Journals.

J. H. S. The Great Skua in Shetland. (*Scottish Naturalist*, November–December, 1926).

Robinson, H. W. The Nesting of the Velvet Scoter, Longtailed Duck and Scaup in Scotland. (*Scottish Naturalist*, November–December, 1926.)

Dale, E. M. A Victoria Day Bird List for London, Ontario. (*Canadian Field Naturalist*, November, 1926.)—May 24, 107 species.

Nichols, J. T. Standard and Adaptive Specialization in Relation to Migration and Distribution. (*Canadian Field Naturalist*, November, 1926.)—Based primarily on a consideration of the bird life of the Aleutian Islands, and Bering Sea.

Lewis, Harrison F. Some Observations of the Birds of the Island of Anticosti, Que. (*Canadian Field Naturalist*, November, 1926.)

Miner, Manly F. The European Starling. (*Canadian Field Naturalist*, December, 1926.)

Lloyd, Hoyes. The 44th Stated Meeting of the A. O. U., Ottawa, October 11–17. (*Canadian Field Naturalist*, December, 1926.)

Fargo, Wm. J. and VanTyne, J. Fall Bird Notes from the Eastern Shore of Lake Superior. (*Canadian Field Naturalist*, January, 1927.)

Wetmore, Alexander. An additional Record for the Fossil Hawk, *Urubitinga enecta*. (*Amer. Mus. Novitates*, No. 241, December 31, 1926.)—From the Miocene of Sheep Creek, Sioux City, Neb.

Witherby, H. F. Banded Birds Captured in Spain (*Boletin de la Real Soc. Espan. de Hist. Nat.*, XXVI, 1926, pp. 450–466.)

Saunders, George B., Jr. A Census of the Song and Insectivorous Birds of Oklahoma Co. for 1924–5. Also Observations of Some Oklahoma Birds. (*Proc. Oklahoma Acad. Sci.*, VI, 1926.)

Nice, M. M. September Nesting of the Mourning Dove in 1925. (*Proc. Oklahoma Acad. Sci.*, VI, 1926.)

Whitley, Gilbert P. Bibliography of James Douglas Ogilby. (*Records Australian Mus.*, XV, No. 2.)

Laigne, Hamilton M. Our Feathered Allies. (*Canadian Forest and Outdoors*, February, 1927.) With Photographs by the author.

Kuroda, Nagamichi. Cormorant Fishing in the Nagara River. (*The Japan Magazine*, July–August, 1926.)—An interesting illustrated article in English. The birds attached to cords watch for their prey from the prow of the boat, dive in for it and are drawn back by the cord and compelled to disgorge the fish.

Stone, Witmer. 'The Distribution of Bird Life in Ecuador.' (*Natural History*, XXVI, No. 6, November–December, 1926.) A revue of Chapman's recent work.

Bailey, A. M. The Pelicans at Home. (*American Forests and Forest Life*, February, 1927.) White Pelicans on Great Salt Lake, etc.

Pendleton, Dudley. The Heath Hen's Last Stand. (*American Forests and Forest Life*, January, 1927.) Refers to the earliest mention of the bird in 'The Sportsman's Companion,' 1783.

J. D. Figgins. That Collection of Geese from the San Joaquin Valley, California. (*Proc. Colorado Mus. Nat. Hist.*, VI, No. 6, December, 1926.)

NOTES AND NEWS

LANGDON GIBSON, an associate of the American Ornithologists' Union since 1887, died on September 4, 1923.

He was born in Boston, Mass., January 5, 1866, his parents being Charles DeWolf and Josephine Elizabeth Gibson. He attended a private school in Boston and at the age of ten moved with his family to Flushing, N. Y., where he continued his education at the local high school and institute. He went directly from school to a business position in Wall Street without going to college and held several positions in banking houses.

Gibson was always devoted to outdoor sports and activities and was skillful at all games in which he took an interest, excelling in skating and tennis, while he became a noted oarsman on the crew of the New York Rowing Club.

Being temporarily out of business at the time that the Stanton Expedition to explore the Grand Canyon of the Colorado was planned, he joined the party, and the trip, hazardous as it was, exactly suited his hardy constitution and love of adventure and the experiences which he went through enriched his life in no small degree. Soon after returning he heard of Peary's proposed expedition to the north coast of Greenland under the auspices of the Academy of Natural Sciences of Philadelphia and succeeded in joining it as ornithologist, spending the winter of 1891–2 in the arctic, and making a valuable collection of birds and eggs which is preserved in the Academy's museum. He obtained the only breeding specimen and downy young of the Greater Snow Goose that have ever been taken and also downy young of the Knot. The technical report upon this collection was prepared by the writer of this sketch and Mr. Gibson was to have added his field notes but complete absorption in business after his return delayed this part of the work which was not published until long after (see 'Auk,' 1922, pp. 350–363).

In 1892 Gibson entered the treasurer's office of the General Electric Co. and was later transferred to the shipping department at Schenectady, N. Y., finally becoming production manager, which post he held until his retirement on account of failing health in 1921. The last years of his life he spent in Florida in the winter and on the New England coast in the summer, devoting himself to fishing and the study of wild life and to writing up his Greenland notes. He also wrote several short notes for 'The Auk.'

Mr. Gibson is survived by his widow Katherine B. Gibson and two sons as well as by his brother Charles Dana Gibson, the well known artist. One of his intimate friends has said in a published appreciation "Langdon Gibson was a man of very unusual and interesting personality. The influence of such men cannot be judged by their direct accomplishments alone, because by example and suggestion they make others better, more

manly and generous." As a business man he was a model of industry, zeal and dependability and had a peculiar faculty for making friendship. He had a great love for science and as his limited experience shows had great ability as an explorer and a thorough knowledge of American bird life. Like many others who have had of necessity to follow a business career he missed what, we have no doubt, would have been an equally brilliant career in science.—W. S.

Dr. E. W. Nelson, chief of the Bureau of Biological Survey, U. S. Department of Agriculture retires from that post on May 9, 1927, having completed ten years of executive service. His connection with the Bureau however dates back to 1890 and his long scientific career, especially as a field naturalist, is well known to our readers.

Dr. Nelson desires relief from the engrossing executive duties which have fallen on his shoulders, in order to resume his research work on birds and mammals.

He will be succeeded by Paul G. Redington now Assistant Chief of the Forest Service, in charge of the branch of public relations.

The former Chiefs of the Biological Survey were, like Dr. Nelson, ornithologists and mammalogists of note—Dr. C. Hart Merriam and Mr. H. W. Henshaw, and the present change transfers the work of the bureau to the direction of a man of rather different interests.

The Governor General of Canada has, on the recommendation of the Minister of Mines, designated the museum in Ottawa, formerly best known as the Victoria Memorial Museum, as the National Museum of Canada.

'Caras y Caretas' the popular illustrated magazine of Buenos Ayres has begun the publication of a series of colored plates of the birds of Argentina with explanatory notes. The plates are from paintings by M. Paul Matzel, made under the direction of Dr. R. Dabbene and presented by M. Doello Jurado director of the Museum Natural History. The first plate presents the four species of Toucans.

The Annual meeting of the New England Bird Banding Association was held February 2, 1927, in Boston followed by a buffet supper. Addresses were made by E. H. Forbush, Prof. Dallas Lore Sharp, Thorton W. Burgess, Charles B. Floyd and others.

At a meeting of the Nuttall Ornithological Club held on March 7, the fiftieth anniversary of Mr. Charles F. Batchelder's connection with the Club was duly celebrated and an engrossed message signed by some forty members was presented to him.

The Western Bird Banding Association has published a mimeographed bulletin containing much local bird banding news and several book reviews.

THE Delaware Valley Ornithological Club held its thirty-seventh annual meeting on the evening of January 6, 1927. The officers elected for the ensuing year were President, George H. Stuart, 3d.; Vice-President, John D. Carter; Secretary, Julian K. Potter and Treasurer, Henry T. Underdown.

IN A publicity article explaining the bird banding work of 'British Birds' under the direction of H. F. Witherby, High Holborn, London, England, it is stated that 170,000 birds have now been banded and special attention is called to the Kittiwake Gull which was banded in the nest on the Farne Islands on the east coast of England, June 30, 1924, and was shot in Labrador October 28, 1925, having crossed the Atlantic.

MR. JOSEPH MAILLIARD has resigned his position as curator, department of ornithology and mammalogy, California Academy of Sciences, to take effect February 28, 1927. On account of advancing years Mr. Mailliard felt that the active administrative duties of the department should be placed in younger hands and that he would like to be able to devote more of his time to investigation and study of the birds and mammals of western America. As a graceful recognition of his long and valuable services to the Academy the Council elected Mr. Mailliard curator emeritus of the department.

Mr. Harry S. Swarth, curator of ornithology in the Museum of Vertebrate Zoology, University of California has been appointed as Mr. Mailliard's successor and will assume his new post March 1, 1927.

WITH THE formation of the Associated Committees for Wild Life Conservation, representing the Massachusetts Audubon Society, the Massachusetts Fish and Game Protective Association, and the Federation of the Bird Clubs of New England Inc., a real step has been taken in the direction of combining the efforts of these important organizations in conservation matters of common interest to all three. It has been felt for some time by those who have urged this step that much duplication of effort could be avoided and greater results could be obtained by such joint action. Those who hunt birds with guns and those who hunt with glasses are alike keen to uphold and enforce the laws protecting our birds. All realize that it is essential to provide reservations and sanctuaries to protect wild life at all times if it is to escape serious decimation and in some cases complete extinction.

This joint Committee will undertake such conservation work as can better be done by their combined efforts, while each constituent organization will continue to work on the special matters which interest it alone. The Associated Committees do not ask for funds as a new organization, but by a joint appeal, make it possible for all patrons of the parent organizations intelligently to support their activities. All funds raised, with the exception of those devoted to the actual expense of carrying on

the work, are employed as stated in the appeals. No compensation whatever is paid to any member of the Associated Committees.

The Associated Committees urge, 1: That the laws protecting song, insectivorous and game-birds must be kept impartially enforced.

2: That reservations and sanctuaries are needed in which all wild life may live undisturbed.

3: That all enemies of our wild life (natural and human) must be kept under control and that the game-birds so far as possible should be propagated to increase the number, or at least to fill the places of those taken.

4: That the Commonwealth should provide funds from the general tax levy to purchase, maintain, and administer throughout the State suitable breeding, nesting and feeding areas for birds and animals.

5: That if future generations are to enjoy those things which delight the lover of the out-of-doors, be he sportsman or bird-lover, the work of conservation must be carried on actively to insure this heritage.

THE MUSEUM of Comparative Zoology has recently acquired the complete Gault collection of Irish birds and the first shipment (some 4000 skins) from the great LaTouche collection of Chinese birds. This collection is rich in rare and disappearing forms and contains many types. Dr. G. M. Allen has returned from some months in Liberia and secured many birds new to the collection as also did Mr. George Schwab during his last two years stay at Sakbayeme, southern Cameroons. The birds from Dr. Eric Mjoberg's recent journey to Mt. Tibang in North central Dutch Borneo have been received and the first examination shows that the so-called "Kina Balu fauna" has a considerable extension along the high ranges far to the south of that peak. Mt. Tibang had not been previously ascended by a naturalist.

Mr. Arthur Loveridge will return in March after a long sojourn in Tanganyika Territory, first in coöperation with the Smithsonian-Chrysler Expedition and later independently in the Uluguru and Usambara Mountains. Here in these outlying rain forest areas, the former somewhat neglected by the Germans during their occupation of the Territory, he has been most successful in getting fine series of the rarer birds among many other special objects in which he is interested.

The installation of the Arthur C. Bent collection and the receipt of a complete collection from Crete, Cyprus and Sardinia, and much additional material from Siberia, Russia, New Zealand, Mexico, Guatemala, western Panama and several other regions has made this year noteworthy as few years have been for the Museum at Cambridge.

AS WE go to press there comes a note from James P. Chapin encamped at 15,000 feet on Mt. Ruenzori, central Africa, where he is facing the great glaciers of Mt. Stanley. He describes the interesting problems upon which he is engaged relating to the zonal distribution of life on the mountain, and reports a most interesting collection of bird skins.